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ABSTRACT

This volume focuses on school finance challenges in large urban school districts, fiscal accountability in these schools, and the fiscal dimensions of urban school reform. The 12 papers are (1) "School Finance and Urban Education Reform" (Christopher Roellke and Jennifer King Rice); (2) "Can Whole-School Reform Improve the Productivity of Urban Schools? The Evidence on Three Models" (Robert Bifulco); (3) "Whole School Reform and School-Based Budgeting in New Jersey: Three Years of Implementation" (Bari Anhalt Erlichson and Margaret Goertz); (4) "Balancing the Books: The Relationship between Fiscal Condition, Educational Output, and District Competition in the Metropolitan Districts of Minnesota" (Nicola Alexander); (5) "School Performance and Resource Use: The Role of Districts in New York City" (Patrice Iatarola, Leanna Stiefel, and Amy Ellen Schwartz); (6) "Teacher Attrition and Mobility in Urban Districts: Evidence from Wisconsin" (Jennifer Imazeki); (7) "Reducing Novice Teacher Attrition in Urban School Districts: Focusing on the Moving Target" (Neil Theobald and Robert S. Michael); (8) "The Adequacy of Urban Education: Focusing on Teacher Quality" (Whitney Allgood and Jennifer King Rice); (9) "Using Student Level Data to Measure School Finance Adequacy: An Exploratory Analysis" (Lawrence O. Picus, Jacquelyn McCroskey, Ed Robillard, Jane Yoo, and Lynne Marsenich); (10) "Private School Finance: Tugging on the Curtain" (Brian Brent); (11) "Private Money/Public Schools: Early Evidence on Private and Non-Traditional Support for New York City Public Schools" (Amy Ellen Schwartz, Hella Bel Hadj Amor, and Norm Fruchter); and (12) "Fiscal Policy in Urban Education: Lessons Learned and Implications for Research" (Jennifer King Rice and Christopher Roellke). (Chapters contain references.) (SM)

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A VOLUME IN RESEARCH IN
EDUCATION FISCAL POLICY AND PRACTICE

UD 035 375

Fiscal Policy in Urban Education

A Volume in
Research in Education Fiscal Policy and Practice
Series Editors: Christopher Roellke, *Vassar College*
Jennifer King Rice, *University of Maryland*

Fiscal Policy in Urban Education

edited by

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Vassar College
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INTRODUCTION

CHAPTER 1

INTRODUCTION AND OVERVIEW

SCHOOL FINANCE AND URBAN EDUCATION REFORM

Christopher Roellke and Jennifer King Rice

We are pleased to introduce the inaugural volume of *Research in Education Fiscal Policy and Practice.* The current education policy emphasis on higher performance standards, school-level accountability, and market-oriented reform presents important research challenges within the field of school finance and the economics of education. The simultaneous pursuit of both equity and efficiency within this policy context creates an unprecedented demand for rigorous, timely, and field-relevant research on fiscal practices in schools.

This book series is intended to help meet this demand by providing a scholarly forum for interdisciplinary research on the financing of public, private, and higher education in the United States and abroad. Our goal is to disseminate high quality empirical studies, policy analyses, theoretical models, and literature reviews on contemporary issues in fiscal policy and

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practice. This, and every volume, is intended for a diversity of readers, including academic researchers, policy makers, and school practitioners.

This first volume focuses on fiscal policy in urban schools. Several of the chapters address school finance challenges in some of the largest and perhaps most complex school systems in the country, such as New York City and Los Angeles. Others analyze fiscal accountability in urban schools, teacher recruitment and quality, private influences on public education, and other pressing issues in urban education reform. While many of the issues addressed in this book are clearly applicable to all schools—urban, suburban, and rural—we intentionally elected to focus on questions of both policy and practice that directly impact schools located in our inner cities. Despite intensified school reform efforts over the last several decades, school systems in the United States and around the world continue in their struggle to operate efficiently and equitably and to provide an adequate education for all schoolchildren. The evidence is clear that these goals of equity, efficiency, and adequacy have been particularly elusive for many urban school systems attended primarily by low income and minority children.

With this in mind, the contributing authors were asked to think of urban policymakers and practitioners at local, state, and national levels as the intended audiences for their work. The majority of papers collected for this volume were originally presented at the 2002 conference of the American Education Finance Association in Albuquerque, New Mexico. The presentations, subsequent dialogue, and feedback at that conference gave rise to the structure of this book, which is organized topically into four distinct, but overlapping areas of urban education policy.

Part I examines the fiscal dimensions of urban school reform, with specific attention given to accountability systems, comprehensive school reform models, and resource use in urban districts and schools. The productivity of whole school reform in urban settings is the focus of Chapters 2 and 3. In addition to addressing the methodological challenges associated with measuring the effects of whole school reform, these two chapters clarify what we have learned from efforts to implement whole school reform, and what these lessons imply for the design of finance reforms aimed at improving student performance in urban schools.

In Chapter 2, Robert Bifulco provides a comprehensive review of existing research on three widely adopted whole-school reform models: Success for All (SFA); the School Development Program (SDP); and Accelerated Schools (AS). Insights on New Jersey's experiences with whole school reform are provided by Bari Anhalt Erlichson and Margaret Goertz in Chapter 3. As a result of the landmark school finance case, *Abbott v. Burke*, New Jersey became the first state in the nation to mandate comprehensive school reform in property poor school systems. The New Jersey Supreme

Court also directed each of these schools to adopt school-based budgeting. In their chapter, Erlichson and Goertz chronicle the ongoing challenges in poor, primarily urban, schools in New Jersey to meet these ambitious, Court-mandated reforms.

In Chapter 4, Nicola Alexander reports on the financial condition and student achievement of metropolitan school districts in Minnesota. These urban districts, she reports, are struggling to meet the dual demands of fiscal accountability and increased standards of student achievement. As Minnesota has a statewide school choice program (open enrollment), Alexander also pays particular attention to the effects of fiscal condition and student achievement on a district's ability to compete for students.

Chapter 5, contributed by Patrice Iatarola, Leanna Stiefel, and Amy Ellen Schwartz, is an analysis of school performance and resource use in New York City. Using a three-year panel of data on New York City elementary and middle schools, Iatarola, Stiefel, and Schwartz identify low and high performing schools and subdistricts. Through interviews and budget data, they further explore how these low and high performing schools and subdistricts utilize their resources. Their analysis reveals that measurable district level characteristics such as size, number of schools, total spending, and resource use do matter and should be considered in performance accountability systems.

Part II consists of two chapters that address the goal of developing and maintaining a high quality urban teaching workforce. The chapters in this section pay specific attention to the alarming teacher attrition rates in poor, urban schools. Jennifer Imazaki notes in Chapter 6 that these poor, urban schools are typically larger, have more diverse student populations, and serve a higher concentration of students with special needs. Using data from Wisconsin, Imazeki examines the impact of wage differentials on teacher retention in urban schools. She finds that teachers are responsive to wages, but that "across the board" state salary increases may not help those districts most in need. She concludes that *targeted* salary incentives, coupled with improved induction and retention efforts hold the most promise for alleviating the urban teacher supply problem.

In Chapter 7, Neil Theobald and Robert Michael draw important distinctions among four different types of novice teachers *(stayers, leavers, movers, and returnees*) and analyze the career paths of these teachers within school districts. They note that teacher attrition rates are high in poor, urban districts and these systems are rarely on the receiving end of "movers." Theobald and Michael conclude that focusing solely on supply-side policies is insufficient and demand-side remedies aimed at reducing teacher turnover should be pursued more aggressively.

In Part III, the contributors focus on issues of equity and adequacy in urban schools. In Chapter 8, Whitney Allgood and Jennifer King Rice describe the adequacy movement in terms of its promise for simultaneously promoting goals of equity and excellence in education. They logically focus their attention on the role of teacher quality in providing an adequate education for urban children. In addition to providing a current review of the literature on teacher quality, Allgood and Rice critique policies aimed at recruiting and retaining teachers in city schools. Key features of urban education adequacy, they argue, include more creative compensation structures and increased attention to teachers' working conditions.

Building on this adequacy theme in Chapter 9, Lawrence Picus, Jacquelyn McCroskey, Ed Robillard, Jane Yoo, and Lynne Marsenich explore the use of student level fiscal data to measure school finance adequacy. The school site used for their study is a large, comprehensive, urban, year-round high school in Los Angeles serving primarily Latino and African-American students. Picus and his colleagues take into consideration not only school budgets, but also other public spending associated with children's services. They find that more than half of the resources available to children in this inner-city neighborhood are derived from sources outside of the school district itself and per pupil expenditures vary considerably. This clearly indicates that both school practitioners and school finance analysts can benefit from examining flows of resources beyond the traditional school budget.

Part IV presents emerging research in the financing of private schools and the use of private money to fund public schools. In Chapter 10, Brian Brent provides a descriptive analysis of private schooling in America. In an expanding school choice environment in which private schools are purported to outperform public schools, Brent anticipates an increased demand for more comprehensive information regarding the funding of private schools in the United States. He describes the current literature base as sparse and disappointing and posits a series of research questions to help guide future inquiry in this important and little understood area of urban school finance.

In Chapter 11, Amy Ellen Schwartz, Hella Bel Hadj Amor, and Norm Fruchter provide an analysis of private and non-traditional support for New York City Public Schools. Using a combination of school budget data and survey data, Schwartz and her colleagues find that the vast majority of public schools receive some sort of non-traditional and/or private support. They also find that the amount of support varies significantly across schools, reflecting the interplay of donor preferences, the ability of school leaders to solicit funds, and the political economy of non-entitlement government funding, among other things. These types of resources, they argue, deserve further scrutiny in analyses and discussions of both equity and efficiency. The Schwartz, Amor, and Fruchter analysis is one of a very small number of studies attempting to understand the nature, distribution and impact of non-traditional/private revenue on public schooling.

The final chapter, contributed by the co-editors, is an effort to synthesize what we have learned and to assess the emerging research needs for urban schools.

The chapters contained here are intended to promote the exchange of ideas among researchers, policymakers and practitioners. We are deeply indebted to each of the contributing authors for sharing their research efforts in this forum. It should be noted that the views of the respective authors do not necessarily reflect the views of the editors, Vassar College, or University of Maryland.

We wish to recognize the production assistance provided by Nur-e-alam S. Chisty, Erica H. Zielewski, and the financial support provided by Vassar College's Ford Scholar program. We also want to express our sincere thanks our publisher, George Johnson, for his encouragement and guidance associated with this project. Lastly, none of our work would be possible without the love and support of our families. Thank you Kim, Emma, and Julia. Thank you Jim, Katherine, Margaret, and Elizabeth. We hope that this and subsequent volumes in our series will contribute to the important and ongoing dialogue on education fiscal policy and practice.

Part I

FISCAL DIMENSIONS OF URBAN SCHOOL REFORM

CHAPTER 2

CAN WHOLE-SCHOOL REFORM IMPROVE THE PRODUCTIVITY OF URBAN SCHOOLS?

The Evidence on Three Models

Robert Bifulco

INTRODUCTION

Over the past decade a consensus, has emerged that improving the fiscal capacity of urban schools may be necessary, but is not sufficient to achieve equality of educational opportunity (Ladd & Hansen, 1999). This consensus is driven by an increased emphasis in educational policy debates on student achievement standards, and skepticism about the ability of schools to translate increased resources into improved student outcomes. In response, school finance scholars and policy makers have concerned themselves with designing finance systems that not only provide more equitable access to educational resources, but that also improve school productivity.

Research in Education Fiscal Policy and Practice, Volume 1, pages 11–35
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Whole-school reform has emerged as one of the leading strategies for improving school productivity—particularly in urban schools that serve disadvantaged and minority students.[1] Two things distinguish this strategy. The first is a focus on the individual school as the unit of improvement, which distinguishes whole-school reform from strategies that focus on systemwide policies and larger governing institutions. The second distinguishing feature is an emphasis on addressing multiple aspects of school operations in a coordinated fashion, including decision making, resource allocation, classroom organization, curriculum, parental involvement and student support. This distinguishes whole-school reform from traditional school level interventions, which have tended to focus on one or another of these issues in piecemeal fashion.

Barnett (1996) reviews three of the most widely disseminated whole-school reform models: Success for All, the School Development Program and Accelerated Schools. This early assessment concluded that "all three models can be implemented as described by their developers without substantial increases in per pupil school expenditures," but that the "evidence for the models' effects on educational outcomes for disadvantaged children is more ambiguous." Other studies have come to similar conclusions and have called for more research on whole-school reform models.[2]

In the last few years, several new evaluations have been completed that address some of the shortcomings of earlier studies. This chapter examines the evidence on the impacts of whole-school reform on student outcomes obtained from these more recent studies as well as earlier evaluations. Like Barnett, I focus on Success for All, the School Development Program, and Accelerated Schools, and thus this chapter might be seen as an update of that earlier review. The primary purpose is to determine what we have learned and what we still need to learn about the role whole-school reform can play in improving the productivity of urban schools.

The chapter is organized as follows. The first section discusses general approaches to improving school productivity, and describes two general types of whole-school reform models. This discussion is intended to clarify the rationale for whole-school reform and its relation to other reform efforts. The second section discusses conceptual and methodological issues involved in evaluating whole-school reform, and the third reviews the evidence on each model. The last three sections review evidence concerning the costs of these models, discuss policy implications, and identify remaining research needs.

APPROACHES TO IMPROVING PRODUCTIVITY

Three broad approaches to improving the productivity of schools can be distinguished. The first approach is to identify the most productive uses of resources, and then to direct funding increases toward those activities. The second approach is to improve the capacity of local school officials, particularly those most directly involved in the education process, to make productive resource allocation decisions. The third approach seeks to provide local school officials stronger incentives for improving student performance. Let us call these the directive, capacity building, and incentive-based approaches, respectively.

The directive approach is reflected in the recent wave of class-size reduction initiatives. Supporters of these initiatives point to evidence on the efficacy of class-size reduction from the Tennessee STAR program and elsewhere, and attempt to direct funding toward this use of resources. The Title I compensatory education program has also relied largely on a directive approach to improving productivity. Due to program restrictions and guidelines, Title I funds have typically been directed to specific resource uses, namely compensatory reading and/or math teachers who worked exclusively with students identified as low performers (Flaxman, Burnett, & Ascher 1995).

The problem with the directive approach is the lack of evidence that any specific use of resources is effective, let alone most effective, in all or even most circumstances. Evidence is mounting that class-size reduction can improve student performance, on average (Grissmer, 1999). However, recent studies also suggest that the effects of class-size reduction vary across schools, and it remains unclear whether class-size reduction provides the greatest bang for the buck, i.e., is the most effective use of resources (Hanushek, 1999). More generally, the results of extensive efforts to estimate the education production function suggest that the effectiveness of any given resource can vary substantially across schools (Hanushek, 1986; Murnane, 1981).

Recognizing that the optimal allocation of resources often depends on local circumstances, a second approach to improving school productivity seeks to improve the capacity of people in the schools to make productive decisions. Improved capacity can be achieved either by attracting higher quality teachers and administrators to troubled, urban schools, or by developing the skills of those currently staffing these schools. Whole-school reform models seek to improve school level decision making by establishing processes that enhance organizational capacity, and by providing training that enables staff to use those processes effectively, and thus provide examples of the capacity building approach.

Whole-school reform models might be categorized by the approach that they take to developing school capacity (Slavin, 1997). Prescriptive models provide detailed directions concerning curriculum, instructional practice, student assessment, staff allocations, student grouping, and other aspects of school organization. Facilitative models, in contrast, emphasize school planning processes through which schools can create their own vision, choose curricula and programs to realize that vision, and monitor implementation.

Success for All is a prescriptive model. Designed for elementary schools, it provides extensive curricula, lesson plans, teaching materials, and training on standardized instructional practices. It requires administration of specific student assessments every eight weeks, student grouping based on the results of these assessments, and structured, one-on-one tutoring programs for students struggling in reading. It also provides similarly detailed student attendance and family support programs. Like the directive approach to school improvement, Success for All seeks to increase productivity by requiring specific uses of resources. Like the directive approach, then, it assumes a known education "technology" that can be replicated, and that will lead to improved student performance wherever it is used, or at least in cases where resources are currently used ineffectively. The directive approaches discussed above, however, focus on which resources are likely to be most productive, while Success for All also considers which processes can make those resources more productive.

The School Development Program and Accelerated Schools are facilitative models. At the core of each of these models are similar school planning and management processes. Both models engage staff and parents in formulating a school vision, use work groups to develop programs that can help realize that vision, and train group members to evaluate progress toward school goals. This process is intended to be an iterative, consensus building one, and team members are trained in techniques of collaboration and consensus building. These models do have different emphases. The School Development Program emphasizes the development of the social skills needed to succeed in school, and help schools develop curricula that incorporate child development principles. Accelerated Schools advocates the use of curricula that emphasize active, group learning and higher-order thinking skills typically reserved for academically gifted students. However, the specific curricula, student support programs and parent involvement activities vary across different schools adopting the same facilitative model. The implicit assumptions are that different curricula and programs can be effective, and that a program's effectiveness depends not only on its content, but also on how well it is adapted to the specific needs and constraints of the school, how committed staff are to making the program work, and how well the program is coordinated with other things going on in the school.

Advocates of the third approach to improving productivity argue that even if school officials had sufficient access to resources and to professional development opportunities, they would still need incentives to spend the time and effort required to develop their skills and use resources effectively. Those concerned with the incentives faced by school officials often assume that these incentives are determined primarily by the institutions and policies that govern school operations, and thus, tend to focus on systemic issues rather than school-level practices. School choice plans that allow parents to select among several schools and tie school funding to the ability to attract students are one way to change incentives. More widely adopted are attempts to develop accountability systems that focus on measures of student performance (Ladd, 1996).

These three approaches to improving productivity are not mutually exclusive. In fact, the capacity building approach is often viewed as a necessary complement to either the directive or the incentives-based approach. For instance, performance-based accountability systems often include programs to identify and improve low-performing schools. Most of these programs begin with efforts to enhance the capacity of identified schools, and this often involves requiring or encouraging schools to adopt whole-school reform models.[3] Conversely, programs that increase the incentives of school officials to adopt effective practices can help to create the conditions required for successful implementation of whole-school reform.

METHODOLOGICAL ISSUES IN EVALUATING WHOLE-SCHOOL REFORM

Before turning to recent evaluations of whole-school reform, it is worthwhile to address some methodological issues. These are discussed under four-headings: definition of the treatment, definition of model impact, treatment interactions and potential selection biases.

Definition of the Treatment

Schools that decide to adopt a whole-school reform model will vary in how well they implement the model. Moreover, the principles and practices associated with many models have diffused beyond the schools that have explicitly adopted whole-school reform. As a result, it is possible that an adopting school represents a particular model less truly than some nonadopting schools. This raises questions about how to define and measure the intervention represented by a whole-school reform model.

One way to address this issue is to ensure that the schools evaluated have fully implemented the model. The purpose of an evaluation focused on successful implementers would be to assess the "efficacy' of a model, i.e., how well it can work under favorable conditions. The problem with this approach is that the schools that have done the best jobs implementing a model will probably not be representative of other adopting schools or of schools targeted for future interventions. Thus, these studies do not tell us about the "effectiveness" of a model, i.e., how well it is likely to work under typical conditions.[4] In addition, the possibility that a school's ability to successfully implement a whole-school reform model depends on unobserved school attributes suggests that good implementers may systematically differ from observationally similar schools. This raises questions about the internal validity of impact estimates derived from comparisons between good implementers and otherwise similar schools.

A second way to proceed would be to measure the quality of implementation at particular sites, and then define the intervention to be evaluated as implementing a particular model with a given level of success. An extension of this approach would be to ignore the decision to adopt altogether, and to rely solely on variation in the extent to which school practices approximate model prescriptions to identify model impacts. Difficulties in assessing the quality of implementation aside, this approach creates the same self-selection bias issues as examining only the best implementers.

A third alternative is to examine a random sample of adopters, and define the treatment as the decision to adopt. This approach has the advantages of providing estimates that can be generalized more broadly, and of avoiding the self-selection issues created by attempts to specify the intervention in terms of implementation quality. However, if it is found that a model does not have consistent impacts, it remains unclear whether this is because the model's principles and prescriptions do not reliably help to improve student performance, or because those principles and prescriptions are not consistently realized at adopting schools.

Definition of Model Impacts

Implementation of a whole-school reform model can help to improve student performance at a school in three distinct ways. It can enhance the capacity of a given staff to use given resources to improve the performance of given students. In this case, whole-school reform enables the school to achieve more output with the same inputs, and thereby improves the efficiency of the school. Alternatively, implementation of whole-school reform might elicit more time from school staff, or help the school attract higher quality teachers and counselors. In this case, whole-school reform improves student performance by helping the school garner additional resources. Finally, whole-school reform may help a school to attract more motivated or capable students.

The first potential effect of whole-school reform, increased efficiency, is unequivocally positive. The second two effects are more ambiguous. Gains achieved by garnering more resources or attracting higher achieving students may come at the expense of losses at other schools. How to treat such gains will depend, in part, on policy goals. Even if performance gains due to the movement of students and reallocation of resources are outweighed by losses elsewhere, they may still be desirable for distributional reasons. For instance, if schools serving large numbers of disadvantaged students adopt whole-school reform, and this helps them compete better for teachers, then the resulting distribution of teacher quality across schools and students will be made more equitable. This is a benefit, even if the gains in student performance at schools with improved teacher quality are smaller than losses at schools that end up with fewer high quality teachers.

Treatment Interactions

The primary focus of most studies is to estimate the average impact of whole-school reform models across schools in the study sample. However, determining how model impacts vary across different types of circumstances, schools, and students might be more important. A finding that whole-school reform models do not have significant impacts on average implies we should not expect much from broad efforts to implement whole-school reform. Nonetheless, whole-school reform could be effective in certain circumstances or types of schools. If we can identify those circumstances and schools, then whole-school reform might still have a useful role to play in school improvement efforts.

Self-Selection Bias

Most attempts to estimate program impacts depend upon comparisons between a group exposed to the program and a control group. Randomized assignment is the best way to ensure that the average outcomes for the control group are unbiased estimates of what would have been observed for the treatment group in absence of the program. However, several considerations limit the information that random assignment studies can provide about whole-school reform. Because whole-school reform involves the whole school, randomization must occur at the school level. It is difficult and expensive to recruit a large number of schools to participate in a randomized experiment. In finite samples, particularly if they are small, differences between the treatment and comparison groups may arise due to sampling error, making it difficult to draw conclusions from the impact estimates provided. Moreover, small samples make it difficult to test hypotheses concerning variation in model impacts across different types of schools. Most important, by explicitly linking program implementation and program evaluation, an experimental design creates incentives for model developers to provide participating schools special support to ensure successful implementation. This situation deviates significantly from what is likely to happen in any large-scale implementation effort, in which the nature of implementation varies widely from one school to the next.

For these reasons, many evaluations of whole-school reform will rely on quasi-experimental data. A full treatment of the self-selection bias issues that arise in quasi-experimental settings is beyond the scope of this chapter.[5] However, there are two aspects of the self-selection bias issue worth mentioning. First, bias can arise in evaluations of whole-school reform due to school-level selection processes and/or student-level selection processes. Thus, schools with unobserved characteristics that influence student performance may be more likely to adopt a whole-school reform model than other schools. In addition, students with certain unobserved characteristics may be more likely to choose a school that is adopting a whole-school reform model. A method that addresses one of these sources of self-selection bias might not address the other. Second, the processes that determine which schools adopt a whole-school reform model are not necessarily the same as those that determine which schools successfully implement that model. Consequently, methods that provide unbiased estimates of the impact of the decision to adopt whole-school reform, including random assignment, might not be useful for estimating the impact of a well-implemented model.

EVIDENCE ON MODEL IMPACTS

Success for All

Among the leading whole-school reform models, Success for All (SFA) has placed the most emphasis on evaluation. Program developers and others closely associated with the developers have conducted evaluations of 29 program sites in 11 different districts across the country (Slavin & Madden, in press). In these evaluations, each SFA school is matched with a comparison school, and then each student in the SFA school is matched with a student in the comparison schools based on kindergarten or first-grade test scores. Each cohort of students entering kindergarten after adoption of

SFA is followed through the third grade and in most cases through the fifth grade. In a meta-analysis of these evaluations, Slavin and Madden (in press) find that, on average, SFA students performed higher than comparison group students on multiple measures of reading skills. Average effect sizes ranged from 0.39 to 0.62 with the largest gains in Grade 5. Effects for students who score in the lowest quartile on pretests were larger, ranging from 1.03 in first grade to 1.68 in fourth grade. Slavin et al. (1994) reports that not only were program effects positive on average, but also that they have been positive in all but one of the individual program sites evaluated (among those evaluations conducted prior to 1994).

Assessments by independent researchers have found less consistent results. In an independent analysis of the original pilot sites in Baltimore, Venezky (1994) finds that although SFA students outperformed students in comparison schools, positive impacts were limited to kindergarten. As a result, SFA students remained below average and continued to fall further below grade-level each year. A study by Smith, Ross and Casey (cited in Jones, Gottfredson, & Gottfredson, 1997) evaluates sites in four different cities, and concludes that there were positive program effects in three of the four cities. However, positive effects were not found for all grades and one of the cities showed positive program effects only after two of the four treatment-control school pairs were dropped because the control school used instructional practices similar to those prescribed by SFA.

The research design used in the SFA studies is superior to those used in many whole-school reform evaluations. Nonetheless, several concerns can be raised. Jones, Gottfredson, and Gottfredson (1997) question the reliance on student assessments not used for more general evaluation purposes. Results from independent studies suggest that higher performance by SFA students on the tests selected by program evaluators may be due partly to greater familiarity with the tasks required by the tests. Ross and Smith (1994) found that SFA students scored higher than comparison group students on the tests used in the program developer's evaluations, but could not find similar effects using results from the Tennessee Comprehensive Assessment Program. Borman and Hewes (2001) examine the five original model sites in Baltimore, and estimate model impacts on scores from district-wide reading tests in eighth grade. Evaluations of these sites by program developers suggest effect sizes in fifth grade greater than 0.50. Borman and Hewes estimate effect sizes of 0.27. These smaller effects may be due to smaller gains by SFA students than comparisons during middle school. Alternatively, they suggest that SFA impacts on general accountability measures are smaller than the effects estimated by program developers.

Along with questions of construct validity, evaluations conducted by program developers are susceptible to potential selection biases. SFA is implemented only in schools where 80% of the faculty agrees to adopt the program in a secret ballot. Evaluations conducted by program developers typically do not indicate whether a similar vote was taken in the comparison schools. If comparison schools would not have agreed to program adoption, it might reflect unobserved differences in school climate or faculty characteristics. These differences, rather than adoption of SFA, might account for any observed differences in student performance.

Finally, the 29 sites included in these evaluations are not a representative sample of SFA schools. Six of the schools are initial model sites that received extensive and close attention from the program designers. In addition, local problems ended evaluations of other sites prematurely. Slavin (1997) argues that prescriptive models like SFA "are expected to work in nearly all schools that make an informed, uncoerced decision to implement them and have adequate resources to do so." He presents this as one of the primary advantages of SFA over more facilitative approaches to whole-school reform. However, existing evaluations of SFA provide little evidence for this assertion. The purpose of most studies has been to evaluate program effects on the reading achievement in cases where implementation has been successful. One study that explicitly assesses implementation quality across multiple sites found that schools do indeed vary in how well they implement the program and that this variation influences program effectiveness (Smith, Ross & Nunnery, 1997).

Little attention has been paid to the effects of SFA in subjects other than reading. In a comparison of one SFA school with a matched control school, Jones, Gottfredson, and Gottfredson (1997) finds that effects on math tests for first and second graders were negative. This suggests that gains in reading may come at the expense of development in other subjects. Borman and Hewes (2001) finds that the effects of SFA on eighth grade math scores are smaller than the effects on eighth grade reading scores, but still positive.

Two recent studies provide more generalizable findings on the impacts of SFA. Sanders et al. (2000) compares test score gains, adjusted for student socioeconomic characteristics, in 22 schools that adopted SFA between 1995–96 and 1997–98 to gains made in 23 comparison schools. The study examines average gains made during fourth and fifth grade across five subjects (math, reading, language, science and social science), each of which is assessed by the Tennessee Comprehensive Assessment Program. It finds that in the year prior to adoption, the schools that adopted SFA show adjusted gains about 92% as large as the gains in the 23 comparison group schools. By 1999, two to four years after adoption, the 22 SFA schools show adjusted gains 110% as large as the gains in the comparison group schools. Hurley et al. (2001) examines all 111 of the schools in Texas that adopted SFA between 1994 and 1997. The analysis compares the percentage of students in grades 3–5 scoring above proficiency on the reading portion of the Texas Assessment and Accountability System in the year prior to adoption and during 1998 (one to four years after adoption). The percent above proficiency improved for all Texas schools, but increases were greater for SFA schools. Increases in the percentage of blacks scoring above proficiency were, on average, 5.62 percentage points greater in SFA schools than in non-SFA schools.

These two studies address several shortcomings of earlier studies. The sample of schools examined are not restricted to pilot sites where special efforts have been made to ensure implementation, and outcomes used for more general accountability purposes are examined. They also examine more recent versions of the model that include curriculum for later grades and in subjects other than reading. However, the studies do not address potential biases due to the fact that SFA schools are self-selected. It is possible that adopting schools were more concerned with raising test scores,[6] or had leadership more capable of securing the consensus required to adopt Success for All.

In sum, it remains difficult to draw precise conclusions about the impact of SFA on student achievement. Independent evaluations suggest that SFA does not have positive impacts everywhere, and that average effects are smaller than indicated by the program developers' evaluations. Nonetheless, recent studies in Tennessee and Texas suggest that, on average, performance on assessments used for general accountability improves more in SFA schools than in other schools. More work is needed to determine if improvements in reading are accompanied by improvements or declines in other subjects.

The School Development Program

Several evaluations of the School Development Program (SDP) focus on implementation. These studies, which primarily rely on case-study methodologies, have identified several factors that facilitate or impede implementation. Factors that make successful and sustained implementation more likely include: district support for the model; positive interpersonal relationships among staff and between staff and parents; competent district or school facilitators who have experience working with school management teams; commitment to change among the staff; perception among the staff that problems addressed by the model match the needs of the school; principal commitment to the model; and access to on-going training. Factors that can impede implementation include negative experiences with previous school reform programs and teacher resistance to parental involvement (Haynes et al., 1996; Millsap et al., 1997).

These findings suggest that SDP implementation might be problematic in many urban settings. Many urban districts and schools suffer frequent superintendent, principal and staff turnover. As a result, maintaining district, principal or staff support for even a few years can be difficult. In addition, given the "policy churn" characteristic of many urban school districts and the multitude of reforms that staff in urban schools are asked to implement (Hess, 1998), staff in troubled schools are likely to have had negative experiences with previous reform programs.

Three recent, independent evaluations provide information about the effects of SDP on student academic achievement.[7] Cook et al. (1998) examine 13 program schools and 10 non-program schools in Prince George's County, and Cook, Hunt, and Murphy (1998) compares 10 program schools with 9 non-program schools in Chicago. Both studies matched several pairs of schools on the basis of test scores and racial composition, and then randomly assigned one school from each pair to adopt SDP. Both studies focus on students in the middle school grades, and use multiple measures of student outcomes prior to and following exposure to the School Development Program. In addition, both studies used student and teachers surveys to obtain measures of implementation and school climate.

Researchers in Prince George's County found that efforts to implement SDP had virtually no impact on either the schools or their students. They found no evidence that either student or staff perceptions of school climate were improving faster in SDP schools than in comparison schools. Adoption of the model did not have any significant effects on measures of psychological well-being or conventional school behaviors. Finally, academic achievement gains among the treatment group students were statistically indistinguishable from gains observed for the control group students.

In Chicago findings were more positive. Both student and teacher ratings of academic climate were approximately the same in the treatment and comparison group schools during the Spring of the first year of program implementation. By the end of the study, however, ratings of academic climate in SDP schools were higher than in the comparison group schools. However, neither student nor staff ratings of social climate in SDP schools improved relative to the control schools. All schools in the Chicago study reported more acting out as students age, but the rate of increase was less steep in SDP schools than in the treatment schools. The rate of decrease in disapproval of misbehavior was also smaller and increases in the ability to control anger were greater in SDP schools than comparison schools. Finally, researchers found that students in SDP schools made small but statistically significant gains in both math and reading relative to students in comparison schools. Particularly, while pre-adoption scores for SDP students were about 3 percentile points lower than the scores of comparison students on both reading and math tests, the mean scores of the two groups were the same after four years.

A third study in Detroit has recently been completed by Abt Associates. In this study, nine schools selected to adopt the School Development Program through a competitive application process were compared to a set of matched comparison schools. Student achievement measures were obtained from the district assessment program, staff and parent surveys were used to assess implementation, school climate and parent attitudes, and researchers made regular site visits to each treatment group school. The evaluators found considerable variation in implementation across the SDP schools. Moreover, comparison group schools showed SDP-like structures and processes to as great an extent as the treatment group schools, reflecting the general diffusion of collaborative planning and management processes. Given these findings on implementation, it is not surprising that average levels of achievement and average achievement gains did not differ among students enrolled in SDP schools and those enrolled in comparison schools. Nor were staff ratings of academic and social climate in SDP schools different than in the comparison schools (Millsap et al., 2001).

The evaluation team reports three additional findings that reflect more positively on the School Development Program. First, the three SDP schools that implemented the model most successfully showed larger achievement gains than their matched comparison schools. Second, these same schools showed larger improvements in implementing SDP structures and processes than did comparison group schools that also showed high levels of those structures and processes. Third, both SDP and comparison group schools that exhibited high levels of SDP-like structures and processes reported more positive academic and social climate, and higher achievement levels. The authors' interpret these findings as evidence that the structures and processes prescribed by SDP create a more positive school climate which in turn helps to improve student learning, and that under certain conditions, model adoption can help to establish the prescribed structures and processes.

Two considerations cast doubt on this interpretation. First, the SDP adopters were selected through a competitive application process. Thus, although the three high-implementing SDP schools matched their comparison schools on several observed characteristics, they probably differed from those schools in unobserved ways that predisposed them for improvement. Second, high student achievement is likely to engender positive academic and social climate in a school, and in turn, positive planning and management processes. This alternative explanation for the observed relationship between achievement, climate and SDP structures and processes gains support from the fact that, while students in schools with superior climates and more of the prescribed structures showed higher levels of achievement, they did not show greater gains in achievement.

The conditions for implementing SDP in Prince George's, Chicago and Detroit were at least as good as, and probably better than, in typical, low-performing urban schools. In each study, the adopting schools were in districts that supported SDP and were provided more resources for training and implementation than in the typical model site. Moreover, adopting schools in Chicago and Detroit demonstrated a desire to adopt SDP, and in Detroit were required to demonstrate a capacity to implement the model. Even under these conditions, SDP could not demonstrate consistently positive impacts on students. The lack of significant differences, on average, between SDP adopters and other schools might be due, in part, to the diffusion of collaborative decision making processes and other SDP principles beyond model adopters. Each of these three studies suggests that most schools, regardless of whether or not they have officially adopted SDP, are implementing key SDP structures and processes. However, even if the diffusion of collaborative decision making and other SDP-like processes has made schools in general more productive, these studies still suggest that adoption of the SDP does not provide an especially effective way to accelerate the diffusion of these beneficial practices.

These findings do not imply that adopting SDP cannot be useful for some schools. The modest, positive impacts found in the Chicago study and the fact that some schools in Detroit appear to have benefitted from adoption, suggests that the model can be a useful part of school improvement efforts. Model adoption may help to focus improvement efforts in schools that are ready to improve, have expressed a commitment to SDP principles, and have support from the district and from program developers.

Accelerated Schools

Evidence on the impacts of Accelerated Schools is more limited than that available for Success for All or the School Development Program. Only two evaluation studies have compared Accelerated School program sites to non-program schools. Both of these studies compare a single program school to a single comparison school, and suffer from serious design flaws that undermine the interpretability of the results (Knight & Stallings, 1995; McCarthy & Still, 1993). The Manpower Demonstration Research Corporation (MDRC) has recently completed an evaluation of eight Accelerated Schools sites across the country using an interrupted time-series design. This method uses measures of student performance at each school in the years leading up to model adoption to project what the performance level of each school would have been in the absence of adoption, and provides defensible estimates of model impacts.[8]

Results from the MDRC evaluation suggest that efforts to implement Accelerated Schools had no effect on student performance in the first two years after model adoption and caused a slight decline in student performance during the third year. The evaluators argue that these results are not surprising because the schools focused primarily on reforming school governance and culture during the first three years of implementation, and most schools did not begin to address curriculum and instruction until the third and fourth years. The slight decline during the third year may be due to the disruption that accompanies efforts to make fundamental changes in instructional practice. Average performance levels began to rise in the fourth and fifth years after adoption, and by the fifth year student performance levels were higher than they were projected to be in the absence of the program. Positive impacts by year five were small, 0.19 standard deviations for reading and 0.24 standard deviations in math, but statistically significant. Positive impacts were somewhat larger among schools that had the lowest average test scores before model adoption (Bloom et al., 2001).

The MDRC study only examines eight schools selected by program developers as representing well-implemented versions of the model. In addition, these schools implemented an early version of the Accelerated Schools model which did not include changes to the curricular and technical assistance components of the model that have been made in recent years. Consequently, it is difficult to generalize the findings from this study to other Accelerated Schools sites.

EVIDENCE ON MODEL COSTS

The costs associated with whole-school reform fall into four categories: personnel, training services, materials and parental time. Personnel costs include new positions devoted to supporting model implementation and extra time devoted by existing staff for training and implementation activities. Training services include any implementation support provided by model developers and others. The need for these services is greater during the first few years of implementation. However, many program developers have come to believe that continuing expert support to train new staff members and refresh others is crucial to sustaining model impacts. For some models, the materials and/or parental time required are minimal. In others, these costs can be significant.

Several studies have estimated the resource requirements of whole-school reform models. Estimates for Success for All, the School Development Program, and Accelerated Schools are presented in Table 1. The difference between the King (1994) and Barnett (1996) estimates are due to the fact that the latter does not include the costs of parental time and argues that extra staff time devoted to model activities are minimal. Another study, not listed in Table 1, has found that extra teacher-time is the single largest resource demand of whole-school reform, accounting for 40% of total implementation costs (Keltner, 1998).[9] This finding raises doubts about Barnett's argument.

Table 1. Estimates of Costs for Three Whole-School Reform Models

Study	*Success for All*	*School Development Program*	*Accelerated Schools*
King (1994)[a]	$261,060–$646,500	$102,800–$278,150	$48,000–$266,000
Barnett (1996)[b]	$160,500–$340,500	$57,500–$219,000	$17,000–$80,000
Herman (1999)[c]	$270,000	$45,000	$27,000
Borman & Hewes (2001)[d]	$153,293–$578,550		

[a] Estimates assume school with 500 students, and do not include costs for materials.

[b] Estimates assume school with 500 students, and do not include costs of parental time.

[c] Estimates are based, in part, on King (1994) and Barnett (1996).

[d] Estimates for actual schools of varying sizes. Estimates do not include extra time devoted by existing staff for training and implementation activities.

The most marked finding is that Success for All is considerably more resource intensive than either the School Development Program or Accelerated Schools. The greatest differences are in costs for new positions. SFA requires a full-time facilitator and certified reading tutors, while the other models only require a part-time facilitator.[10] SFA also involves more training services and more instructional materials than the other models. The fact that SFA has shown more consistent impacts than SDP might be due to the fact that SFA devotes more resources to improvement efforts rather than to its prescriptive nature, its focus on instruction, or the quality of its curriculum. It might be that, if a school devoted as many resources as are typically devoted to implementing SFA to establishing collaborative planning and management processes and addressing students' social needs, the impact of SDP would be greater.

Devoting more resources to implementing collaborative planning and management models is risky. Asking teachers to devote time to school planning and to developing management skills reduces the time they have to devote to planning classroom activities and developing instructional skills. Unless teachers work more hours, or the benefits of collaborative planning outweigh these opportunity costs, adopting a facilitative model may decrease teacher effectiveness and school productivity. Furthermore, Payne and Kaba (in press) argue that if a school suffers from certain social dysfunctions, such as lack of trust, establishing consensus and collaboration can be difficult. In these cases, it can take years before planning processes have any significant effect on classroom practices. These risks might explain why schools willing to devote significant resources to programs that address curriculum and instruction, may be unwilling to devote similar resources to models that focus on school planning and management.

In assessing impacts on productivity, the amount of resources devoted to model implementation may not be the most important issue. Many of the resources devoted to whole-school reform are not additional resources, but rather a reallocation of existing resources. For instance, analyses by developers indicate that most of the costs of implementing SFA are financed by reallocating Title I funding (Slavin et al., 1996). Since other schools use levels of Title I funding similar to those used in SFA schools, SFA schools might not use more resources than the schools to which they have been compared. The important question is whether or not whole-school reform adopters use more resources than comparison group schools.

Borman and Hewes (2001) address this question most directly. Using a sample of students from five SFA schools in Baltimore and matched comparison schools, this study estimates the impact of attending a SFA elementary school on eighth grade reading and math scores. They also estimate the impacts of SFA on the number of times a student is retained in a grade and the number of times a student is referred for special education services. They, then, estimate the additional per pupil costs of SFA, grade retention and special education referrals, and use these estimates to calculate the total cost of schooling through eighth grade for each SFA and control group student in their sample. They find that SFA students score significantly higher on reading (effect size = 0.27) and math (effect size = 0.17), and that there is no statistically significant difference between the cost of schooling for SFA students versus the cost of schooling for control students (controlling for kindergarten test scores).

The Borman and Hewes (2001) analysis relies on several questionable assumptions. First, their method of estimating the cost of schooling assumes that all resources devoted to implementation of SFA are extra-resources, above and beyond the resources available to comparison schools. Second, their estimates of the costs of SFA do not include the costs of extra time from existing staff that may have been devoted to model training or implementation. Finally, they assume that the costs saved by preventing a referral to special education is equal to an estimate of the national average additional per-pupil expense of special education services. Students that SFA prevents from being referred to special education are most likely students on the margin. The services that such students would receive if referred to special education are likely to be less intensive, and less costly, than those provided to the average special education student. Thus, Borman and Hewes' method probably overestimates the savings accrued in Success for All schools by reducing special education referrals.

Despite these problems, Borman and Hewes' analysis does suggest that SFA school may not use more resources than the schools with which they have been compared, and leaves little doubt that differences in resources between SFA and non-SFA schools are less than the total resources devoted to SFA implementation. This suggests that any student gains created by SFA may result from better use of existing resources, and not merely an influx of additional resources. More studies that combine estimates of model impacts with careful comparisons of resource usage at treatment and comparison group school are needed.

If SFA does demand extra resources, and not merely a reallocation of existing resources, the relevant question is whether SFA has larger positive effects than alternative interventions. For instance, are marginal resources devoted to implementing Success for All more productive than marginal resources devoted to class-size reduction? Without better estimates of the amount of additional resources used by SFA schools, such comparisons must be imprecise. Nevertheless, comparisons based on currently available evidence can be informative.

The estimated effect sizes obtained from evaluations of SFA conducted by model developers, 0.39 to 0.62, are larger than those obtained from the Tennessee STAR study, which range from 0.20 to 0.35 depending on the study (Grissmer, 1999). However, independent evaluations suggest that the average impacts of SFA are smaller than indicated by the program developers estimates, and are probably more similar to the impacts of class-size reduction in the STAR program. The STAR program reduced class-sizes from an average of 24 to an average of 16 in kindergarten through grade 3. Achieving reductions of that size in a typical school (500–600 students) would require approximately two new classrooms per grade, or a total of eight additional classrooms. Based on data from several Florida districts, Reichardt (2000) estimates that the average cost of an additional classroom is $53,000. This puts the estimated cost of class-size reduction at about $425,000 per school—within the range of the SFA cost estimates presented in Table 1. Recall, however, that the estimates in Table 1 represent the full costs of implementing SFA, some of which might be covered by reallocations of existing resources.

It appears, then, that devoting resources to implementation of SFA might be as cost-effective as devoting resources to class-size reduction. However, this conclusion needs to be qualified in several ways. First, the evidence on the efficacy of class-size reduction, particularly from the Tennessee STAR program, is stronger than the evidence on SFA. Second, it remains uncertain whether gains in reading due to SFA are typically augmented or offset by changes in math performance. If reading gains are often offset by losses in math, then this must be seen as an additional cost. Finally, and perhaps most importantly, the impacts of both SFA and class-size reduction are likely to vary across schools. From a policy perspective, identifying which intervention is likely to have the largest impacts in different types of schools may be more important than deciding which intervention would be more cost-effective, on average, across the full range of schools.

POLICY IMPLICATIONS

Until recently, evaluation research on whole-school reform consisted primarily of small-scale studies of pilot sites conducted by model developers. These evaluations were useful for developers working to refine their models, and provided reason to believe that models could have important benefits under certain conditions. However, the evidence these studies provide is inadequate for drawing strong conclusions that these models can consistently foster improved student achievement in low-performing schools across a broad range of implementation settings. As initiatives to implement these models more broadly have emerged, this second stage evaluation question has become more pressing. In recent years, larger-scale studies with more rigorous designs have been conducted to address this research need. So far these studies have been limited to a few models, most notably Success for All, the School Development Program, and Accelerated Schools.

The recent evidence suggests that Success for All has had positive impacts on average. Average impacts are probably not as large as the 0.39 to 0.62 effect sizes estimated in the program developers' evaluations. Moreover, impacts have not been positive at all model sites as program developers have claimed and as their slogans "every child, every school" and "wherever and whenever we choose" imply. The School Development Program does not appear to have positive impacts on average. However, it may have positive impacts in some places under certain conditions. Evidence on Accelerated Schools, as for most whole-school reform models, is insufficient to draw general conclusions.

Whether SFA has more consistently positive impacts than SDP due to its prescriptive nature, its attention to instruction, or because it focuses more resources on improvement efforts is not clear. In an evaluation of the evidence on 24 whole-school reform models, Herman (1999) finds strong evidence of positive effects on student achievement for only one elementary school model other than SFA—Direct Instruction. Direct Instruction also uses a highly specified curriculum and scripted instructional practices suggesting that more prescriptive models may have more consistent results.

However, Direct Instruction also provides more intensive and costly training than most whole-school reform models. Thus, as in the case of SFA, it is not clear whether its prescriptive nature or resource intensity distinguishes Direct Instruction.

The relatively large amount of resources demanded by SFA raises questions about whether its positive impacts are the result of increased productivity at SFA schools or merely increased resources. The answer to this question hinges on whether the resources used to implement SFA represent additional resources or a reallocation of existing resources. The facts that SFA is often financed by reallocating Title I funds and that SFA schools may spend less than other schools on special education and grade retentions suggest that SFA enables schools to produce higher student performance without significantly increasing resources. However, the one study that directly compares costs at SFA schools to costs at control schools relies on questionable assumptions. Thus, whether or not the positive impacts of SFA result from additional resources or a more productive allocation of existing resources remains uncertain.

Based on this evidence, I would argue that whole-school reform models can play a useful role in improving the productivity of urban schools. However, officials must be judicious in designing policies to encourage their use. No model can improve student outcomes in all schools. Adopting a whole-school reform model in a school where it is unlikely to work wastes resources. It might also undermine staff morale and foster negative attitudes toward school reform, making future improvement efforts more difficult. More research is needed to identify the conditions under which particular whole-school reform models are most likely to succeed. However, we do know enough to make some recommendations. First, mandating that schools adopt whole-school reform, and particularly mandating the adoption of a particular whole-school reform model, is unlikely to significantly increase productivity. Although research on the conditions under which SFA succeeds or fails is limited, research on other models and on organizational change processes generally creates serious doubt that SFA can improve school operations if there is not some level of buy-in from teachers. Such buy-in cannot be mandated. Second, for whole-school reform to succeed, substantial support from the district and program developers is necessary. Training on model principles and practices should not be thought of as a one-time investment, but needs to be provided continuously as new staff enter a school and the commitment of existing staff fluctuates. Third, given the uncertainty that surrounds the effectiveness of most whole-school reform models, whole-school reform efforts should include strong evaluation components.

Finally, even under the most favorable conditions, whole-school reform cannot be expected to enable students in many troubled, urban schools to achieve up to the levels increasingly demanded in the current policy environment. Even in the pilot Success for All sites, where program developers found substantial, positive impacts on reading performance, students remained below grade-level and fell further below grade-level as they moved through elementary school (Venezky, 1994). This does not imply that whole-school reform cannot be worthwhile. However, whole-school reform models are merely one tool among others that are needed to improve urban education.

DIRECTIONS FOR FUTURE RESEARCH

Recent evaluations of whole-school reform have provided valuable information. We now have stronger evidence on the effects of at least three whole-school reform models than we did five years ago. Nonetheless, several important questions remain unanswered. Four research needs standout.

1. *Evaluations of more models.* Rigorous, multi-site evaluations of the impacts of whole-school reform models on student performance are largely limited to the three models examined here. Evaluations of most whole-school reform models have been conducted by model developers, include only a small number of case studies, and often do not examine impacts on academic outcomes.[11] Until we have strong evidence about the impact of more models, it will be difficult to determine why some models are more effective than others. For instance, without evaluations of other prescriptive and facilitative models, it is difficult to know whether Success for All has had more consistently positive impacts than the School Development Program because SFA is more prescriptive or because more resources have been devoted to its implementation.
2. *Cost-studies.* Obtaining good estimates of the impacts of a whole-school reform model is only the first step needed to determine whether or not it can improve productivity. The second step is to accurately estimate the costs of implementing the model. Studies that carefully compare both student performance and resource usage at model schools and control schools are needed. The relevant questions are whether schools that adopt a model use more resources per student than comparison schools, and if so, how much more. Only with answers to these questions can we determine if the model improves school productivity or is more cost-effective than alternative interventions.
3. *Estimates of Long-Term Impacts.* Are the impacts that whole-school reform models have on student performance in the elementary

school grades sustained as these students move through middle and high school? Do the effects of whole-school reform models increase, level-off or disappear in schools where they have been established for five or more years? Studies conducted to-date provide little information on these questions. Ultimately, these questions must be answered before we can judge the value of whole-school reform. Although programs that are able to achieve short-term gains for a few cohorts should not be dismissed entirely, they are unlikely to play a significant role in any broad-based effort to fundamentally improve schools.

4. *Identification of factors that promote the success for whole-school reform.* Whether or not whole-school reform efforts have enhanced productivity, and whether or not they represent cost-effective uses of resources are not the only important policy questions. It is also important to determine how whole-school reform models can be used in the most cost-effective way. This requires identifying which models are likely to have positive impacts in which situations. Studies that look at the interactions between whole-school reform efforts and characteristics of the schools implementing the model, their students and the policy environment are needed. Existing case studies suggest several factors that might influence model efficacy, and suggest that the interactions among these factors and whole-school reform efforts are complex. However, current findings do not enable us to identify where particular models are likely to have positive impacts and where they are likely to fail. Theories about how whole-school reform models work to improve student performance, and studies designed to test specific theoretical hypotheses are needed.

NOTES

1. The prominence of whole-school reform is reflected in several recent policy initiatives including: the Comprehensive School Reform Demonstration program, a New Jersey Supreme Court ruling requiring hundreds of urban schools across the state to adopt school-wide reform; and several local district initiatives such as those in Memphis, Miami-Dade, and New York City.
2. A recent publication of the National Research Council concluded that whole-school reform designs have "achieved popularity in spite rather than because of strong evidence of effectiveness and replicability" (Ladd & Hansen, 1999).
3. New York State, for instance, requires schools identified for registration review to develop and implement plans for improving student performance. To assist schools, the New York State Education Department has provided "design fairs" in which model developers present their programs to school representatives, and encourages schools to choose a model sup-

ported by the Department. More recently, the New York City Board of Education has placed many of the registration review schools in New York City in a special district, and required those schools to adopt Success for All.

4. The distinction between program "efficacy" and program "effectiveness," which is widely made in the field of public health, was suggested to me by Howard Bloom.
5. For a fuller discussion of these issues and methods for addressing them see Bifulco (in press).
6. The schools in both studies adopted SFA in the context of high profile state accountability systems. Such systems place greater pressures to improve test scores on some schools than others, e.g., schools identified as low-performing. Schools under greater pressure might be more likely to adopt SFA, and also more likely to pursue other means of raising test scores, such as preparation in test taking skills.
7. Of the studies conducted by program developers that examine student outcomes, only two use designs sufficiently rigorous to provide estimates of model impacts, and neither of these studies examines academic outcomes. For a review of program developer studies see Haynes et al. (1996).
8. For careful description and defense of this method see Bloom (2001).
9. Results from this study are not included in Table 1 because the study does not report separate estimates for individual models.
10. Paraprofessionals are used in place of certified reading teachers in many SFA sites, reducing costs. However, many sites also use more than one full-time facilitator.
11. See Herman (1999) for a comprehensive review of existing evaluations of other whole-school reform models.

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CHAPTER 3

WHOLE SCHOOL REFORM AND SCHOOL-BASED BUDGETING IN NEW JERSEY

Three Years of Implementation

Bari Anhalt Erlichson and Margaret Goertz

INTRODUCTION

In May 1998 the New Jersey Supreme Court issued its fifth decision in a nearly two decades old school finance case, *Abbott v. Burke.*[1] The Court's decision directed schools in thirty poor, urban districts (the so-called "*Abbott*" districts)[2] to adopt a comprehensive school reform program (also known as whole school reform) by the academic year 2000–2001.[3] In practical terms, the Court's mandate required nearly 450 schools in New Jersey to adopt such models in a three-year period as the primary way of addressing the special educational needs of urban students. New Jersey is the first state in the nation to require schools in property-poor districts to adopt comprehensive school reform programs. Additionally, the Court's decision

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directed each school to adopt school-based budgeting (SBB) concurrently with its WSR implementation.

In mandating comprehensive school reform, the New Jersey court followed a course begun in the early 1990s. In 1991, the New American Schools Development Corporation (NAS) initiative spurred large-scale development, testing and implementation of comprehensive school reform models. Seven models are a part of the NAS Corporation. They are the following: Audrey Cohen, ATLAS, Co-nect, Outward Bound, Modern Red Schoolhouse, National Alliance for Restructuring Education and Success for All/Roots and Wings. Initially a small pilot program focused on Title I schools with a high density of students living in poverty and the number of schools implementing comprehensive school reform has quickly grown.

The federal Comprehensive School Reform Development (CSRD) program and the Improving America's Schools Act of 1994 (IASA, Public Law 103-382, also known as the reauthorization of the Elementary and Secondary Education Act) increased the number of schools eligible to implement comprehensive school reform models. Under the IASA, schools can implement school wide reform programs if at least half of their student body comes from low-income families. Previously, only schools with a 75% or higher poverty rate were allowed this flexibility. The CSRD program, as specified in the Obey-Porter Amendments to the 1998 Labor-Health and Human Services-Education Appropriations Act (Public Law 105-78), allocated additional resources for schools to use as start up money for whole school reform models. New Jersey's statewide implementation of whole school reform (WSR) dramatically expands upon the direction set by the CSRD program.

Interestingly, New Jersey's use of comprehensive school reform models in school districts with a history of low student achievement foreshadowed the 2001 reauthorization of the Elementary and Secondary Education Act, also known as *No Child Left Behind* (Public Law 107-110). This act established new accountability requirements for states and schools such as introducing statewide tests in grades 3 through 8, the identification of persistently "failing" schools, and the requirement that such schools adopt a "scientifically based research" program of reform. The act specifically mentions comprehensive school reform models as an example of an acceptable, research-based option.

THE NEW JERSEY CONTEXT

Less than two months after the Court's decision, the New Jersey Commissioner of Education issued the regulations governing the first year implementation of WSR and school-based budgeting on July 1, 1998 (New Jersey Administrative Code, 1998). The regulations set broad rules and expectations for the *Abbott* districts regarding early childhood education, whole school reform, supplemental programs in secondary schools, site-based management and school-based budgeting, and school facilities. The New Jersey Department of Education's plan for elementary schools included resources to support a WSR model, a Family Support Team composed of a social worker, counselor, school nurse and parent liaison, and technology and security personnel. The *Abbott V* decision also gave school districts the right to request and obtain other supplemental personnel if they demonstrated the need.

The scale-up of whole school reform implementation in New Jersey is organized in yearly cohorts. While the state supreme court mandated the selection of a model within three years, schools were able to choose in which of those three years to begin implementation. Table 1 illustrates the breakdown between cohorts and year of model adoption.

Seventy-two schools began implementing a comprehensive school reform model during 1998–99 as a part of Cohort One, about four months after the court's decisions. Some of these schools had in fact been implementing a model since the early 1990s, others quickly chose a model based on information presented at NJDOE-sponsored "Developer Showcases." Typically, a principal and a few members of the school management team attended the showcase and disseminated the printed materials among the school's faculty. Teachers were then expected to vote for a model based on this information, the report of those who attended the showcase, and whatever limited information they could gather on their own. Initially, the NJDOE approved only five models for adoption: Success for All, The School Development Program (Comer), Community for Learning, Coalition of Essential Schools, and Modern Red Schoolhouse.

In 1999, the Commissioner issued regulations to govern whole school reform implementation for five years (New Jersey Administrative Code, 1999). The regulations included some changes from the previous year, including provisions that school management teams could "opt out" of the SBB process and that schools could create their own WSR models if they met a series of criteria. However, for the most part, regulations governing WSR implementation remained unchanged.

An additional eighty-three schools began implementing comprehensive school reform models in 1999–2000 as part of Cohort Two. The NJDOE expanded the list of approved models to include five additional programs: Accelerated Schools, America's Choice, Co-nect, Paideia, Talent Development, and Ventures. The NJDOE continued to facilitate the choice of models for Cohort Two schools by holding numerous model showcases and by

Table 1. Statewide Implementation of Comprehensive School Reform Models, by Model and Cohort (Year of Implementation)

	COHORT (Number of schools implementing each model is reported for each cohort)					
MODEL	*One*	*Two*	*Midyear Second*	*Three*	*Midyear Third*	*TOTAL*
Year Implementation Begun	*1998–1999*	*1999–2000*	*2000–2001*	*2000–2001*	*2001–2002*	
Accelerated Schools Program	1	14	10	7	0	32
America's Choice	0	6	3	8	4	21
ATLAS	0	0	0	1	0	1
Coalition of Essential Schools	3	3	8	32	13	59
Community For Learning	23	8	3	2	0	36
Co-nect	0	7	4	19	3	33
High Schools That Work	0	0	0	2	6	8
MicroSociety	0	0	1	0	0	1
Modern Red Schoolhouse	2	5	0	2	0	9
PAIDEIA	0	1	0	2	1	4
School Development Program (Comer)	16	13	7	76	6	118
Success For All/Roots & Wings	27	23	5	13	1	69
Talent Development	0	1	0	1	9	11
Ventures	0	2	0	11	6	19
Alternative Program Design (approved)	0	0	0	6	7	13
TOTAL WSR SCHOOLS	72	83	41	182	56	434

providing some limited information via the department's web pages. As discussed below, despite the additional year, teachers in Cohort Two schools continued to report that the model selection process was plagued by short time lines, a lack of substantive information about the models, and the absence of true teacher buy-in.

In 2000-01, more than two hundred additional schools began implementing a comprehensive school reform model as a part of Cohort Three. The NJDOE expanded their list of approved models again to include models targeted to high schools, such as High Schools That Work. To date, fourteen different reform models are being implemented in New Jersey. The model selection process for Cohort Three schools did in fact capitalize

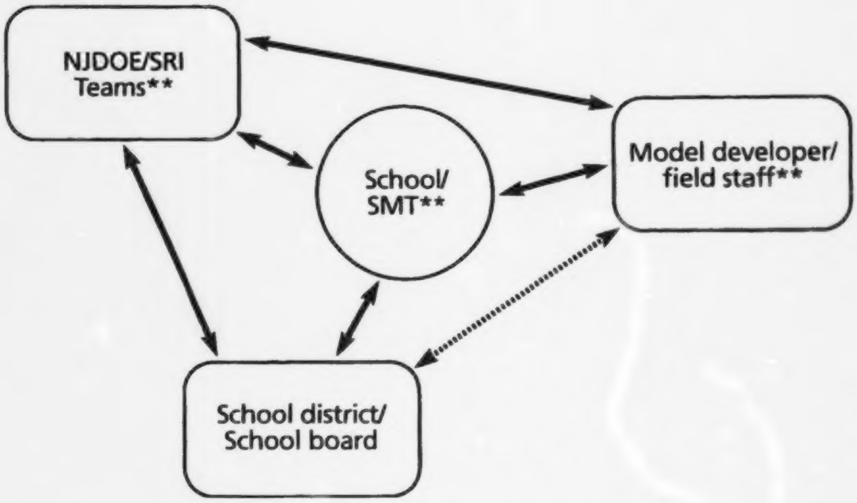

Figure 3.1. New governance structure. ** marks new governance entities

on the additional time. For example, most Cohort Three schools in our study reported that they had an opportunity to send teams to nearby schools implementing several models.

The implementation of whole school reform changed the traditional hierarchical governance structure to one where the school was placed at the center of a multitude of relationships (Figure 1). As part of the implementation, three new entities or parties to the implementation were created. The NJDOE hired field personnel, the schools established management teams, and developers also hired field staff. Under the new structure, schools had direct contact with the NJDOE and their field personnel. Schools were asked to submit school-based budgets, implementation plans, facility plans, evidence of compliance with regulations in establishing their management teams, and technology plans directly to the NJDOE, through a review process involving their field personnel.

Placing the school at the center of the interactions among the various partners in WSR has forced the school to filter inconsistencies in messages and to prioritize competing demands. Schools have reported limited success in this regard. By pushing more programmatic and budget authority both down to the schools (in terms of planning and budget formation) and up to the state (in terms of approval authority), the new governance structure has created considerable ambiguity about the role of the district administration with regard to both fiscal and programmatic decision making.

METHODOLOGY

We began a study of the process of whole school reform and school-based budgeting implementation during the first year of the policy. Over three years, we visited 82 separate schools in nine *Abbott* districts that are implementing seven different whole school reform models. Our study has included schools at every stage of implementation. In 1998–99, we visited 32 schools in Cohort One. In 1999–2000, we revisited 20 of these Cohort One schools and added 26 Cohort Two schools who were then in their first year of implementation. In 2000–2001, we revisited ten Cohort One and ten Cohort Two schools and added 25 Cohort Three schools. By systematically adding new schools while revisiting others, we have been able to look at the process of implementation and its changes across years but within the same model. In this way, we can see what—if any—changes developers are making to their own implementation processes.

Our school site visits involved interviewing principals, model facilitators, teachers, SMT members, and whoever took the lead in the school-based budgeting process. We also interviewed district personnel, including the superintendent and business administrators. Model developers and their staff participated in our study as well as personnel from the New Jersey State Department of Education. We interviewed, on average, more than 250 separate individuals in each year of our study.

Additionally, we surveyed teachers via a confidential questionnaire. Despite the fact that we did not return to every school to conduct interviews, we included all schools *ever* visited within the study in the questionnaire process. In 2000–2001, we received 50% of these surveys back from our 82 study schools for a total of nearly 1300 responses from classroom teachers.

The questions asked during our interviews fell into two separate categories. First, we focused on whole school reform implementation. We sought to understand and explain how schools selected their models and why the schools chose the models they did. We were also concerned with what kinds of support were available to the schools in the implementation process from districts, developers, and the state department. Then, we sought to describe common obstacles or barriers to effective model implementation as well as identify actions taken to correct those obstacles.

Second, we focused on the implementation of school-based budgeting in the *Abbott* districts. During this part of our data gathering, we asked interviewees to describe the school-based budgeting process in chronological phases. We began by asking them what occurred before the budget process began, in terms of the receipt of directions or training. Then, we asked how they formulated their school budget, i.e., how did they know what to put in it and who helped them in this stage. Next, we asked them to describe what occurred after submission of their budget. Finally, we asked them to detail the significant obstacles or challenges they encountered during the budget process. We asked similar questions of the state department, districts, and developers in order to tease out the various roles that these individuals or organizations played. We also collected school budgets and analyzed them for patterns in resource allocation.

In this chapter, we first turn to some brief conclusions about WSR implementation and its difficulties. Then, we discuss the SBB process and implementation more fully. Finally, we conclude with a discussion of implications for continuing implementation of both WSR and SBB.[4]

IMPLEMENTING WHOLE SCHOOL REFORM IN NEW JERSEY

In this section, we outline the most common and persistent difficulties or obstacles to the implementation of WSR in New Jersey. It is important to keep in mind though, that these statements are generalizations about common experiences in New Jersey. Not every school suffers from each of the listed difficulties and certainly not to the same degree.

Flawed Model Selection Process

When thinking about whole school reform in New Jersey, an important point bears emphasis: *Abbott* schools are compelled to implement a model. This very fact separates New Jersey's experience from nearly every other school implementing a reform nationwide. Being compelled to choose a model within three years—or face the possibility of being forced to implement Success for All (as the regulations suggest, New Jersey Administrative Code, 1998), has resulted in a relatively uninformed and undemocratic model selection process. This fact alone has had significant implications for the implementation of models across the state.

Each school essentially established their own process for selection a model. As mentioned above, the NJDOE sponsored Developer Showcases during which developers met with prospective schools, made presentations, and distributed materials. In the later cohorts of implementation, schools reported that they collected additional information from the developers. Some districts organized developer presentations. Our Cohort Three study schools reported that they visited nearby schools to see models in practice to a greater degree that Cohorts One and Two. Schools were not however formally trained in how to conduct this process.

In our study, nearly every school reported that they received an insufficient amount of information to make an informed decision and that teachers were not fully engaged in the process of selecting a WSR model. This feeling persisted even within schools that actively pursued information by hosting developers at their school, visiting other schools that were already implementing models, and holding faculty meetings to discuss the models. This feeling also persisted despite the additional decision time afforded schools that joined one of the later cohorts of implementers. Only 24% of Cohort One teachers reported that their opinion was incorporated in the model selection process in 1998–99. That percentage grew to 42% among Cohort Two teachers in 1999–2000 and to 53% among Cohort Three teachers in 2000–2001.

Mismatch Between Expectations of a Model and Reality

Unfortunately, the most visible "side-effect" of the poor selection process was the rapid realization by many schools that they had misunderstood the framework of their selected model and the types of changes the school would have to make to fully and faithfully implement the model. Some of the "surprises" included finding that a model required significant alterations in teaching style despite the model's lack of a specific curriculum, and that a model required extensive preparation or planning time (at the individual teacher level, grade level, and across grade levels). In addition, most of the solutions to problems within the school would in fact have to come from within the school. This last point merits further discussion. Schools often reported choosing specific models because the model promised to not "mandate" a curriculum or a particular "way of doing things." Many schools found, however, that models often offered very few specific solutions or strategies to solve problems within the school. Instead, these so-called "process" models offered a method for identifying needs within the school, investigating alternative solutions, and analyzing the resultant data. Many schools appreciated the need for that type of process but ironically desired that the model staff be, in fact, more prescriptive. More prescriptive models, such as Success for All and America's Choice, seemed to provide fewer surprises in part because the school-level implementation process was well defined during model selection.

Absence of Link to Core Curriculum Content Standards

Schools reported—consistently across models—that models lacked an explicit link to the New Jersey Core Curriculum Content Standards, the academic standards for which schools are held accountable. State Department of Education personnel reported that they had done a "cross walk" of the standards with the various models and found no obvious conflicts. Most model developers insist that, since their models do not contain a prescribed curriculum, their models are aligned to the standards. However, many schools voiced disappointment that these model developers did not take a more active role in assisting them to make the linkages between the model and implementation of the standards. Success for All—our most prescriptive model under study—seemed to have made the most effort to align their model to the standards. They reported that they had adapted their model (particularly the order of Math lessons) to be more closely aligned as well as trained their field staff in the standards. Respondents from America's Choice schools reported that the America's Choice standards eclipsed the New Jersey Standards.

Lack of Time

Every school in the study mentioned the lack of time as a significant implementation problem. Most often principals and facilitators bemoaned the absence of the time. This included time to train or turnkey staff in implementation of the model, the time to plan or meet across grade levels or within committees, the time for teachers to plan their own lessons based on the training received, and more generally the time to reflect on their own practice and the direction of the school. Due to the relatively short scale-up time frame, schools were generally unable to alter their schedules prior to implementation. Thus, models that depended on teacher committees seemed to experience the most difficulty compared to models that relied on grade-level meetings since most schools had already established common grade-level preparation periods. In the second and third years of implementation, some districts worked with their unions to add time to the school day as well as to budget for teacher compensation for after-school meetings.

Lack of Consistent and Meaningful Support from Developers

Because models have different foci, implementation time lines, and levels of prescriptiveness, models vary widely in terms of how much of any given type of support that they offer. However, developers typically engaged in three types of support: initial professional development, on-site feedback and assistance, and on-call support via email or telephone. For example, SFA personnel conduct all of the initial professional development, training all teachers before the beginning of the school year. Several times during the year, SFA teams conduct "implementation checks" to monitor a school's progress. Additionally, SFA facilitates both statewide and district meetings for facilitators. Finally, SFA is responsive to schools' concerns via email and phone. Comer, by contrast, conducts two week long training sessions at its Yale University Headquarters. The teams that attend these meetings then turnkey this training at faculty meetings or professional development days. Comer also assigns a point person to a school to assist the facilitator. Although they visit the school, Comer personnel do not regularly participate in the turnkey training sessions. Comer also facilitates a statewide network of implementing schools.

Closely related to the problem of the mismatch of model expectations and reality, and frustrated by the lack of time to implement, schools report that they are disappointed by the level of support provided by developers. Developers having to scramble to hire new staff to accommodate the influx of New Jersey schools can explain some of the disappointment. Often this means that schools work with a model's field personnel who are in their first year of working with the developer. Other schools report a high degree of turnover among the developer's staff, hindering the building of trust between school personnel and model field staff.

While each model has a unique support structure, and therefore generalizations are difficult, the process-oriented models appeared to garner this criticism more frequently. Teachers from America's Choice schools report the highest level of agreement, at 54%, with the statement, "The model's field staff is helpful to teachers." The length of time implementing the model also appears to play a role. For example, in 2000-01, about 50% of Cohort One and Two teachers in Comer schools report that the model staff is helpful compared to only 30% of Cohort Three Comer teachers.

Lack of Meaningful and Consistent Support from NJDOE Field Staff

Similar comments were made about the schools' relationships with NJDOE field staff, although it appears that there has been improvement across the years of implementation when focusing on the schools' relationship with Program School Reform and Improvement personnel (SRIs). The regulations mandate that the NJDOE assign an SRI team to every school implementing whole school reform. An SRI team consists of representatives from both the programmatic and fiscal state offices. Program staff were generally expected to assist schools in writing their implementation plans and implementing their models and site-based governance. Fiscal staff were expected to assist schools in the formation of their school-based budgets.

Schools initially reported the absence of Program SRI at SMT meetings. However, by year three of implementation, most schools reported a pleasant relationship with their Program SRI, although it was likely that their SRI person had changed several times since the first year of implementation. Furthermore, state department respondents reported they provided higher levels of training to Program SRI personnel in the later years. What remains lacking however is meaningful support and training with regard to the school-based budgeting process. This is discussed more fully below.

IMPLEMENTING SCHOOL-BASED BUDGETING IN NEW JERSEY

An integral part of the whole school reform effort in New Jersey is the delegation of resource allocation decisions to the school level. School-based budgeting and site-based management policies are intended to increase the effectiveness and productivity of schools by bringing the perspectives of those closest to the students—parents, teachers and school building administrators—to the decision-making process, and by giving schools the flexibility to design programs and target resources to those services and programs that meet the unique needs of their students. The rhetoric of school-based budgeting in New Jersey reflects these goals. But to what extent are these principles reflected in actual practice? This section examines both the intended and actual budgetary roles and responsibilities of the schools, districts and the State in the first three years of whole school reform implementation. It concludes with a discussion of the resource allocation patterns that emerged from the school-based budgeting process.

School-based Budgeting Procedures

The procedures for developing, reviewing and approving school-based budgets (SBB) in the *Abbott* districts are contained in the state administrative code adopted in September 1999. Schools must develop zero-based budgets each year, in a format prescribed by the Commissioner of Education, that include the components of their whole school reform model as well as additional programs and services identified in their needs assessments (called "local particularized needs"). The principal has primary responsibility for preparing this budget, with input from the school's staff and school management team (SMT). The SMT has the authority, if they choose, to approve the budget. The school district's business administrator is expected to help the principal develop the budget and to provide SMTs with budget training.

Principals submit budgets to their superintendent and local board of education two weeks prior to sending the documents to the NJDOE, which reviews and approves all school budgets. If the school district raises concerns about a school budget, the school can either change its budget or submit its original budget to the State with the local board's comments and the school's response to these comments. After the NJDOE approves the school budgets, the district must allocate adequate funds for their support in its budget. Districts are expected to reallocate their own resources to meet these costs, and do not have the authority to over-ride the State's approval of their schools' budgets.

If districts do not have sufficient funds to support their schools' budgets and "particularized needs" after reallocating their own resources, they can apply to the State for additional aid to implement the required reforms. The NJDOE has the authority to approve districts' applications for this additional aid, as well as to order schools and districts to reallocate resources to free up funds to support needed programs. If the Department supports a district's request for additional funds, it then asks the state legislature to appropriate the needed funds for the ensuing year.

State Guidance and Technical Assistance in Budget Preparation

The state provided four kinds of assistance in budget preparation. First, the NJDOE disseminated a guide that contained the most recent regulations, procedures and forms to be used in the preparation and submission of program plans and school budgets. While school and district staff generally found the contents of these guides helpful, the State distributed them late in the budget preparation cycle (generally four to six weeks before schools had to submit their budgets) and with limited training in their use. In the third year, the NJDOE also distributed budget worksheets in an Excel spreadsheet format.

Second, the Department provided budget-training sessions each fall. The State included district staff, as well as principals, in their budget training sessions, with the expectation that district personnel would provide "turnkey" training, as well as technical assistance, to principals and SMT members. State training, however, was limited to one, two-hour session at which NJDOE personnel, in the words of one participant, "read the book." Missing from the workshop was the hands-on, individualized training that many school budget leaders desired.

Third, the State provided direct technical assistance to schools through "budget managers" who are members of the SRI teams. In the first year, the NJDOE was unable to hire fiscal experts in time to assist the schools with budget development. In the next year, the budget managers provided school-level training in the budget process following the November 1999 workshops, and worked directly with principals and SMTs in the preparation of the school budgets. Their contact with schools was limited in fall 2000, however, and their role focused on the review, rather than the preparation, of school budgets.

Finally, the NJDOE distributed illustrative budgets for each WSR model to further guide school budget preparation. Table 2 presents the illustrative budgets for the major WSR programs at the elementary school level (labeled as "model budget" in the first column of each program) for the 2000-01 school year.[5] These model budgets contain resources for both the WSR programs and positions identified in the *Abbott V* decision (e.g., technology coordinator, security guard, counselor, social workers). The State limited the elementary school illustrative budgets to the regular education program in grades 1–5 (with the exception of SFA that year). Schools were to budget separately for their early childhood programs (kindergarten and 3 and 4-year-old programs), special education and other categorical programs. Schools that have adopted the Success for All model were allocated five teacher tutors. Schools with other models were given $300,900 in "additional resources for other strategies consistent with their model," an amount equivalent to five teaching positions, with benefits. The model budgets also included funding for non-salary instructional costs (e.g., curricular materials and consultants, technology and other equipment, extracurricular activities, and professional development), and for non-salary administrative costs.

Although the WSR models differ considerably in their philosophy, content coverage, and pedagogical focus, the State illustrative budgets generally included similar kinds and levels of resources for each program. A state respondent explained that "[we] worked back and forth with the model developers, as to what was in the model. [But] I'll be honest with you; the staffing levels of all the models are the same, and that's based on a study to get the 1:21 ratio of kids and everything else."

The District Role in School-based Budgeting

In the first year of implementation, the State limited the role of districts in the school-based budgeting process. To minimize what it feared would be central office interference in school budget decisions, the State required schools to send their budgets simultaneously to the state and local district for review. In the two succeeding years, in an attempt to increase district involvement in the budgeting process, the State gave districts a two-

Table 2. Comparison of WSR Model and Average School Budgets, Elementary Schools: 2000–2001

Model	*Accelerated Schools*			*America's Choice*		*Community for Learning*		
	Model Budget	*Average District 5*	*Average District 2*	*Model Budget*	*Average District 3*	*Model Budget*	*Average District 2*	*Average District 5*
Grade Span	1 to 5	1 to 5	1 to 5	1 to 5	1 to 5	1 to 5	1 to 5	1 to 5
Enrollment	416	301	589	416	421	416	587	347
Teachers: 1 to 5	18.00	14.33	25.00	20.00	18.60	18.00	25.71	16.75
Regular Specialists	4.00	3.53	8.50	5.00	3.88	4.00	9.63	3.59
Principal	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Facilitator	1.00	1.00	1.00	2.00	2.00	1.00	1.14	1.50
Social Worker	1.00	0.33	1.00	1.00	0.80	1.00	0.93	1.00
Counselor	1.00	1.00	1.00	1.00	0.90	1.00	1.43	1.00
Nurse	1.00	1.00	1.00	1.00	1.00	1.00	1.29	1.00
Family Liaison	1.00	1.00	1.00	1.00	1.20	1.00	1.14	0.88
Lib/Media/Tech Coor	2.00	1.50	2.00	2.00	2.00	2.00	2.31	1.88
Security	1.00	1.00	2.00	1.00	0.25	1.00	2.57	1.00
Clerical	2.00	2.00	3.00	2.00	2.00	2.00	2.57	1.88
Support Aides	3.00	0.00	0.00	3.00	0.00	3.00	3.00	0.25
Dist/Project Coach	0.25	0.00	0.00	0.00	1.20	0.25	0.00	0.00
Teacher Tutors PreK/K Aides	0.00	0.86	0.00	0.00	0.00	0.00	2.71	1.92
*Vice Principal**	*0.00*	*0.00*	*0.00*	*0.00*	*0.60*	*0.00*	*1.29*	*0.00*
*Basic Skills/IST **	*0.00*	*0.00*	*0.00*	*0.00*	*2.60*	*0.00*	*0.71*	*0.00*

Table 2. Comparison of WSR Model and Average School Budgets, Elementary Schools: 2000–2001 (Cont.)

Model	*Accelerated Schools*			*America's Choice*		*Community for Learning*		
	Model Budget	*Average District 5*	*Average District 2*	*Model Budget*	*Average District 3*	*Model Budget*	*Average District 2*	*Average District 5*
*Instructional Aides**	*0.00*	*0.33*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.50*
*Non-instruct Aides**	*0.00*	*0.00*	*0.00*	*0.00*	*0.60*	*0.00*	*0.11*	*0.00*
*Attendance**	*0.00*	*0.17*	*0.00*	*0.00*	*0.00*	*0.00*	*0.43*	*0.35*
*In-School Suspension**	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.29*	*0.00*
*SAC Counselor**	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.29*	*0.00*
*Full-time Substitutes**	*0.00*	*0.00*	*0.00*	*0.00*	*1.00*	*0.00*	*0.00*	*0.00*
*Other**	*0.00*	*0.08*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*1.00*
Total Staff	**36.25**	**29.13**	**46.50**	**40.00**	**39.63**	**36.25**	**58.55**	**35.50**
Pupil-staff ratio	**11.48**	**10.33**	**12.67**	**10.40**	**10.62**	**11.48**	**10.03**	**9.77**
Salary and Benefits	2025769	1836788	2555278	2240116	2469766	2036469	2987723	2139650
Non-Salary Costs**	605600	451162	672361	684745	536671	601100	573253	413573
Total Costs	2631369	2287950	3227639	2924861	3006437	2637569	3560976	2553223
Cost per pupil	6,325	7,601	5,480	7,031	7,141	6,340	6,066	7,358

Notes: * Positions that are outside the Illustrative Budget.

** Includes $300,600 in lieu of teacher tutors, non-salary instructional costs (e.g., curricular materials and consultants, technology and other equipment, extracurricular activities, and professional development), and non-salary administrative costs.

*** Sum of non-instructional staff (e.g., principal ..security)

Table 2. Comparison of WSR Model and Average School Budgets, Elementary Schools: 2000–2001 (Cont.)

Model	*Comer*			*Success for All*			
	Model Budget	*Average District 2*	*Average District 5*	*Model Budget*	*Average District 2*	*Average District 4*	*Average District 5*
Grade Span	1 to 5	1 to 5	1 to 5	PreK to 5	PreK to 5	PreK to 5	PreK to 5
Enrollment	416	461	309	584	764	477	482
Teachers: 1 to 5	18.00	23.00	13.50	24.00	34.00	23.50	21.34
Regular Specialists	4.00	5.05	5.09	4.00	8.83	3.79	3.79
Principal	1.00	1.00	1.00	1.00	1.00	11.13***	1.00
Facilitator	1.00	1.00	1.00	2.00	1.75		1.70
Social Worker	1.00	0.83	1.00	1.00	0.75		0.60
Counselor	1.00	1.25	1.00	1.00	1.50		1.20
Nurse	1.00	1.25	1.00	1.00	1.50		1.00
Family Liaison	1.00	1.00	1.00	1.00	1.00		1.00
Lib/Media/Tech Coor	2.00	1.95	1.50	2.00	2.25		1.90
Security	1.00	2.00	1.00	1.00	2.00		1.20
Clerical	2.00	2.25	2.00	2.00	3.00	3.25	1.90
Support Aides	3.00	0.50	0.10	3.00	3.00	2.25	0.10
Dist/Project Coach	0.25	0.25	0.00	0.00	0.00	0.00	0.00
Teacher Tutors	0.00	0.00	0.00	5.00	7.25	6.88	4.64
PreK/K Aides				7.00	5.75	8.75	4.80
*Vice Principal**	*0.00*	*0.25*	*0.00*	*0.00*	*0.75*	*0.00*	*0.00*
*Basic Skills/IST **	*0.00*	*0.75*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*

Table 2. Comparison of WSR Model and Average School Budgets, Elementary Schools: 2000–2001 (Cont.)

Model	*Comer*			*Success for All*			
	Model Budget	*Average District 2*	*Average District 5*	*Model Budget*	*Average District 2*	*Average District 4*	*Average District 5*
*Instructional Aides**	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
*Non-instruct Aides**	*0.00*	*0.50*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
*Attendance**	*0.00*	*0.00*	*0.50*	*0.00*	*0.25*	*0.00*	*0.42*
*In-School Suspension**	*0.00*	*0.25*	*0.00*	*0.00*	*0.25*	*0.00*	*0.00*
*SAC Counselor**	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
*Full-time Substitutes**	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
*Other**	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.40*
Total Staff	**36.25**	**43.08**	**29.69**	**55.00**	**74.83**	**59.55**	**46.99**
Pupil-staff ratio	**11.48**	**10.70**	**10.41**	**10.62**	**10.21**	**8.01**	**10.26**
Salary and Benefits	2025769	2193190	1845956	2847108	3430593	2562509	2869310
Non-Salary Costs**	640800	483423	409328	478100	454828	579474	616445
Total Costs	2666569	2676613	2255284	3325208	3885421	3141983	3485755
Cost per pupil	6,410	5,806	7,299	5,694	5,086	6,587	7,232

Notes: * Positions that are outside the Illustrative Budget.

** Includes $300,600 in lieu of teacher tutors, non-salary instructional costs (e.g., curricular materials and consultants, technology and other equipment, extracurricular activities, and professional development), and non-salary administrative costs.

*** Sum of non-instructional staff (e.g., principal…security) week period to review and comment on school budgets prior to their submission to the Department.

The districts in our study did not play a *substantive* role in the development of school budgets. Most district staff continued to feel shut out of the budget process as illustrative budgets and state fiscal staff drove the content of school budgets. With this in mind, district personnel limited their activities to disseminating school-level information about prior year expenditures, staff salaries and categorical program needs, assisting in the *process* of compiling school budgets, and, in some cases, inputting school budgets into the State's computer system. In 2000–2001, one of the study districts gave schools and trained school staff in the use of a computerized budget-planning tool developed by the Trenton School District. District fiscal and program staff assisted schools in other ways, answering questions and helping schools fill out the state's voluminous and complex programmatic and budget forms. In addition to providing technical assistance, the districts helped schools focus on the needs of their children and buildings.

The supportive posture of the district offices carried over to their review of school budgets. With only two weeks to review school budgets, district staff generally checked budgets only for accuracy, consistency, and appropriate justifications of budget items. They also ensured that schools addressed the state mandates, whether it was security, technology or minimum class size. In a few cases, districts asked schools to add positions and/or programs, either to ensure equitable distribution of services across schools or to respond to district priorities, such as before- and after-school programs. Districts made few cuts before sending school budgets to the State. One district respondent explained, "We were … not experts in each model, how were we going to determine what was allowable in each model?" District staff also did not want to place themselves in an adversarial position with their schools. Districts cultivated a sense that they would serve as an advocate for the schools. "They will fight for us with the state, but only if it is justified," one principal said.

The School Role in School-based Budgeting

The burden of preparing the budgets fell most heavily on the building principals who were given primary responsibility for budget development under the state regulations. In one study district, building SMT teams voted not to participate in the budget process. The superintendent of another district required principals to chair their SMTs "to make sure that the principal is running the school and not just a committee." Even when SMTs remained involved in the budget process, their role was often confined to "coming up with major ideas" and approving budgets drafted by their principals. At one school, the entire SMT conducted assessments of parent and teacher needs at the start of the school year, but then included only non-teaching staff in the actual budget creation process. A few schools formed budget committees; in others, the principal picked a few members of the SMT to work with him or her on the budget.

Teachers had minimal input in the budget process outside of the SMT. As shown in Table 3, in 2000–2001, only 20% of the teachers responding to the survey felt they had influence in how their school spends money. Similarly, few teachers reported they knew how much money their school had to implement its whole school reform model (20%), or how this money was being spent (28%). There was little reported change in teacher involvement over time. Teachers in Cohort One schools reported having only slightly more influence over school budgets in the third year of implementation (21.7%) than in the first year (18.8%), and reported about the same level of knowledge of their school budget. Teachers in the third year of implementation (Cohort One in 2000–2001) reported similar levels of budgetary influence and knowledge as teachers in their first year of whole school reform (Cohort Three). There was some variation across the nine study districts, however, from a low of 7% in the district that did not involve SMTs in the budget process to a high of 38% in another district. Participation in the budget process often reflected the governance structure of the model being implemented, with more participatory or consensus-based models demonstrating higher levels of participation in the budget process.

Table 3. Percent of Teachers Responding "Agree" or "Agree Strongly"

	Cohort One Schools 1998–1999 (Year 1)	*Cohort One Schools 2000–2001 (Year 3)*	*Cohort Two Schools 2000–2001 (Year 2)*	*Cohort Three Schools 2000–2001 (Year 1)*
I have influence in how our school spends money.	18.8%	21.7%	18.5%	20.3%
I know how much money the school has to implement this model.	22.8%	19.7%	20.8%	21.2%
I know how this school is spending money to implement this model.	25.2%	26.7%	28.9%	27.5%

One reason for limited teacher involvement in the school-based budgeting process was time. Few principals wanted to pull teachers out of class to work on the budget, a necessity if their district did not provide overtime pay. The short time line presented by the State did not allow sufficient time to bring everyone up to speed on the details of the budget. And many principals felt their teachers had their plates full implementing new instructional programs. In other cases, principals felt that the budget ultimately was their responsibility.

With little time for deliberation and reflection, schools turned to the illustrative budgets and their SRI staff for help in preparing budgets. While the illustrative budgets were intended to clarify the components of the school budgets, school and district staff were not certain how closely they were supposed to adhere to these model budgets. Three problems emerged from the interviews with district and school staff. First, some district staff found the state's staffing and salary guidelines unrealistic. Second, schools, districts and the State did not always agree on what was allowable under the *Abbott* guidelines. Schools were especially confused about which programs and services were "inside" and which were "outside" the WSR model, thereby requiring them to submit an application for a "local particularized need." This application required schools to justify additional programs and services that were identified in their needs assessments but not included in their model's illustrative budget. Third, schools received mixed messages about how much flexibility they had to allocate staff within their model budgets. A state respondent argued that the illustrative budgets were meant to be just that—illustrative. "They were never intended to be a rigid prescription." Some budget managers used the illustrative budgets as rigid templates, however. In some schools, the state denied staff positions it believed were unjustified and forced schools to accept staff positions that schools felt were unnecessary.

In the end, school budgets were largely the result of negotiations between schools and their budget managers. However, differences in fiscal savvy did not explain all of the variation. In one study district, for example, elementary schools using a similar WSR model submitted comparable budgets; the state accepted some and rejected others. There are several possible explanations for this inconsistent interpretation of policy. The first is that the budget managers were housed in regional offices, not in Trenton. So, they had few opportunities to discuss or compare their review criteria with each other or with state fiscal staff. Second, turnover in fiscal staff in the Department left no one to set a consistent policy. Finally, the split authority between fiscal and program staff may also have contributed to inconsistencies. While school budgets were to be reviewed by both offices, program and fiscal staff often did not review them together and applied different review criteria.

Resource Allocation Patterns

We collected school budgets for all Cohort One and Two schools in four of the study districts for the 2000–2001 school year. In this section, we compare actual resource allocation patterns with illustrative budgets for the primary WSR models used in elementary schools in these districts.[6] Some direct comparisons are difficult (e.g., the number of teachers) because of differences in the size of the model school and the operating schools. Therefore, we computed student/staff ratios and per pupil costs where appropriate to facilitate comparisons.

The resulting budget patterns can be characterized as "Illustrative Budget Plus." As shown in Table 2, schools budgeted the positions included in their illustrative budgets and, in many cases, added vice-principals, teacher tutors, basic skills teachers, attendance staff, and additional security and instructional aides (the positions noted in italics). These data confirm the observation of one district respondent that schools raised themselves to the level of the illustrative budget where it represented an increase in their current spending or resources, and then added vice principals, additional equipment and additional instructional support staff that were not in their model(s). The structure of the 2000–2001 budgets did not allow us to track the reallocation of positions within schools. The appropriate data were available, however, for the 1999–2000 budgets. Our analysis of those data showed that most of our first year (Cohort One) study schools filled an average of one-third of their new WSR positions through the reallocation of staff. Title I teachers often became teacher tutors or model facilitators. Other supplemental instructional staff were assigned to classrooms to reduce class size and/or meet growing enrollments, or were reassigned into the roles of facilitators and technology coordinators (Erlichson & Goertz, 1999).

Holding school size constant, schools in most of the study districts budgeted, on average, more staff than their models require. Illustrative budgets for three of the elementary school models—Accelerated Schools, Community for Learning, and Comer—call for a student/staff ratio of 11.5:1 in grades 1 to 5. Budgeted ratios, however, were generally in the range of 9.8:1 to 10.7:1. (The illustrative budget for America's Choice was more generous, calling for a student/staff ratio of 10.4:1. Schools in District 3 that use this model budgeted at about that level.) Two factors explain the higher levels of staffing. First, many schools budgeted for slightly smaller class sizes—between 20 and 22.6 students per teacher—than those called for in most of the models—23.1 students per teacher. Second, schools using models other than SFA had $300,900 "in lieu of teacher tutors" they could use to fund additional positions. Finally, it does not appear that smaller schools—those with fewer than the 416 students in the model school—had their staff allocations reduced proportionately. The staffing structure of the models built in fixed costs by requiring all schools to have a principal, social worker, counselor, etc. A school with 300 students—common in District 5—was not expected to employ three-quarters of a facilitator, nurse, counselor, and so forth.

While student/staff ratios were consistent across districts and models, per pupil costs were not. Most of the elementary school models budgeted about $6400 per pupil; SFA, which covered pre-K to 5 that year, cost about $5700 per pupil. Actual school budgets ranged from $5500 per pupil to more than $7600 per pupil for the non-SFA models and from $5100 per pupil to $7200 per pupil for SFA. Average costs varied more across districts than across models. For example, average school budgets in District 2 range from $5100 to $6100 per pupil, while those in District 5 run from $7200 to $7600 per pupil. One reason for these differences is the variation in average salaries across communities. A second factor is the interaction of average school size and the fixed cost of the non-instructional staff contained in the illustrative budgets. Districts with small schools (e.g., elementary schools in Districts 4 and 5) had higher per pupil costs for the mandated, non-instructional positions. Districts with larger schools (such as elementary schools in District 2), conversely, had lower per pupil costs for these staff.

When districts totaled the state-approved school budgets, they often exceeded anticipated school-level expenditures. In response, districts cut their central office budgets, generally in the areas of technology and facilities. Some of the district staff hoped that the facilities reductions would be offset by new dollars from the court-ordered state-funded facilities program. Unable to reallocate their remaining central office funds, 25 of the 30 *Abbott* districts requested a total of $1.234 billion in supplemental funds (including early childhood programs) in 2001. The NJDOE initially granted $315 million of this request. It argued that schools and districts had over-budgeted by $469 million, could reduce or reallocate another $374 million in expenditures, and should apply an additional $76 million of federal aid and surplus funds to their budgets. Districts have appealed many of these decisions.

CONCLUDING OBSERVATIONS

New Jersey is engaged in a bold attempt to improve its poorest and lowest performing schools through whole school reform and needs-driven, school-based budgeting. In many ways, New Jersey's story is unique; directives have driven urban school reform from the state's Supreme Court. In other ways, what we have learned about the implementation of WSR and school-based budgeting in New Jersey's urban schools has implications for states and districts embracing this reform strategy. We can expect considerable local variation in mandated reforms that compel schools to change through school improvement processes, "corrective action" or "takeover," and hold schools accountable for the reform implementation and success. We begin this section with a discussion of the first question that policymakers ask: Has this reform effort worked in New Jersey? We then turn our attention to three issues that confront states as they seek to implement state-driven, whole school reform, particularly in urban communities. First, the implementation of whole school reform and site-based budgeting requires more capacity than currently exists in the educational system. Second, increasing state oversight of school decisions as a way of holding schools accountable for enacting reform programs creates ambiguity about the districts' role in reform and sends conflicting messages to schools. Third, shared governance structures can constrain the authority of schools, rather than empowering them to make needed changes.

Has Whole School Reform Made a Difference?

It is no doubt too early to draw definitive conclusions about the success of whole school reform in New Jersey. First, although Cohort One schools began implementation in 1998–99, the vast majority of schools began in 2000-01. Developers were initially under pressure to have schools implement their models within three years, but now most time lines have been extended. Second, the standard for measuring student achievement—the 4th grade Elementary School Proficiency Assessment—was new in 1999, eliminating the possibility of a true "pretest" for Cohort One schools. Further complicating this picture are the actions of the new Commissioner of Education who took office in January 2002. In anticipation of needing to revise all statewide tests to respond to *No Child Left Behind*, he has now proposed eliminating sections of the exam entirely. Finally, the plaintiffs in the *Abbott* case have long complained that the NJDOE has in fact never truly embraced the implementation process. The plaintiffs cite the lack of adequate implementation guidelines, trained personnel, and simple foot-dragging. Since the *Abbott V* decision, the plaintiffs have returned to court twice to argue these points. The court has issued increasingly detailed plans for early childhood implementation in response.

It is clear, however, that whole school reform is not working well in every school in the state. The mandated nature of the reform in no small way contributed to a lack of enthusiasm for comprehensive school reform at the school site. In contrast to schools in other states where they might have first identified their weaknesses and then sought a model to address those specific weaknesses—sometimes in a process that spanned several years—schools in New Jersey were essentially told that they "had problems" and must choose a reform. This resulted, in many instances, in schools reporting that they choose a model that would be the "least intrusive," allowing them to either continue their own programs or avoid changing in substantive ways. As mentioned above, many schools are surprised to discover that the model they believed was the least intrusive is in fact requiring them to change. However, these models tend to be process-oriented and it is therefore difficult to gauge a "reluctant" school's actual compliance with the implementation process.

Characterizing those schools where model implementation is "succeeding" proves to be more challenging. First, these schools are typically located within supportive district contexts. In two of our nine study districts, the superintendents are actively leading the implementation process. They have engaged their schools in further types of training, aggressively managed developer relationships, worked to decrease the school-level strain of the budget process, and focused their own staffs on model implementation. Thus, implementation in these districts appears to be going more smoothly regardless of what model is actually being implemented. Second, schools that reported that they used collaborative decision processes and actually deliberated the selection of a model carefully also seem to be having more success in their implementation. These schools often had a better understanding of the model and the types of change it would require. But also, the presence of a collaborative faculty prior to implementation seems to have enormous dividends during the implementation process as missteps are forgiven, teachers shoulder the requirements of the model willingly, and overall level of trust is present.

Although our study's intent was not to evaluate specific models but rather to focus more broadly on the process of implementation, it is indeed interesting to note that we suggest that successful implementation appears to be contingent on non-model characteristics—a supportive implementation environment. A model successfully implemented in five or six schools within one district can experience tremendous problems in another school or district regardless of the level of prescriptiveness of the model. While not surprising, this finding—essentially that schools and districts must be willing and capable of engaging in change—points to the inherent difficulty of top-down school reform. Developers in New Jersey are now altering their implementation processes to build high level of buy-in at the school site and motivate both principals and facilitators to be active leaders. Process-oriented models—contrary to some extent to their philosophies—have also found themselves in the uncomfortable role of being more prescriptive, more hands-on, and more directive in the implementation process. In this way, developers hope that they can remedy the initial lack of a supportive environment.

Lessons Learned

1. *The lack of will and skill to change.* The success of mandated school reform hinges in part on the willingness of educators to honestly assess their schools' needs, and to embrace different ways of teaching their students and organizing their schools. The will to change must be accompanied by knowledge of *how* to change. We found, however, that the implementation of both whole school reform and school-based budgeting in New Jersey suffers significantly from a systemwide lack of capacity. School level actors such as principals and model facilitators are ill prepared to take on the variety of new tasks required of them, and report that they need further training in coaching their staffs in the implementation of their model. Most principals have little to no budgeting experience, and many had never used an Excel spreadsheet prior to last year's budget process. Districts, developers and the state department of education do not have the capacity to help their school staff. At the district level, administrators are also "learning while doing." Some administrators report being left out of state training sessions as well as training from the various developers. Turnover among district business administrators in our nine districts exceeded 50% during our three years of study. At the state level, the NJDOE lacks the quantity of field personnel to provide support during budget formation, leading to a frustrating process of submission-review-revise-resubmit and repeat. Most schools report submitting three or four different versions of their budgets. Finally, some developers are scrambling to hire additional field personnel, often settling for people that schools find under-qualified for the positions.
2. *Complex governance, unclear roles, and conflicting messages.* New Jersey's attempt to reform urban education has been significantly hampered by a governance structure that shifts major programmatic and budgetary authority to the state level without clear criteria for what school-based decisions will or will not be approved. The new governance structure that emerged from the *Abbott* regulations (Figure 1) places the school in the middle of a complex system of relationships. The school is now responsible for formulating budgets, setting programmatic priorities, and negotiating directly with the NJDOE. The NJDOE, on the other hand, has now taken on the role of approving school plans and making decisions regarding school-based budgets as a way of ensuring that schools implement mandated reforms. This simultaneous reassignment of formation and review responsibilities away from the district has created considerable ambiguity about the district's role in setting goals and priorities. One superintendent

commented, "I think it's very difficult to have a vision for the district now because of the policies and procedures that the NJDOE has promulgated … The Board to the degree that it wants, I guess, can set some policy, but the Board has no more right than to comment on the budgets."

Complicating the situation, schools and districts report that the NJDOE seems to lack a set of criteria or standards that govern decisions about what programs and funding requests to support. Due to the large number of schools submitting budgets, a team of budget analysts review school-based budgets. Sometimes multiple teams review budgets within the same district, leading to anecdotal stories about the school down the block—"who has the same kids that we do"—getting more of their requests approved. Schools and districts are particularly frustrated by the instructions to engage in pure zero-based budgeting and complex needs assessments only to see their budgets reviewed without regard to need. Schools are left feeling that the process is capricious and dependent on the state field staff.

3. *Multiple actors limit school empowerment.* Whole school reform and school-based budgeting are designed to empower schools and enable them to make program and budgetary decisions that meet the particular needs of their students. New Jersey's shared governance structure for school reform can constrain this authority, however. First, schools may be subject to multiple and conflicting priorities. The *Abbott* regulations empower school principals and management teams to choose models, formulate budgets, and identify priorities. But the regulations also state that schools must implement models according to developer's specifications. Schools now need to be responsive to model developers who utilize most if not all of the professional development days within the school calendar, who have their own visions that may or may not conflict with the district's vision, and who have their own ways of evaluating the progress or lack of progress of a school's implementation. At the same time, district administrations have been slow to relinquish their traditional control over district missions, budget allocations, personnel evaluations, and professional development, among other tasks. One principal joked that he now has 100% of the responsibility, but only 50% of the power under the *Abbott* regulations.

Second, although the school-based budgeting process requires schools to base their school budgets on an annual and detailed needs assessment, state review and approval of individual school budgets has placed real budgetary control in the hands of the NJDOE. Schools now 'negotiate' directly with the state department

> for their budgets. These negotiations are very detailed in nature; principals report that NJDOE field staff review school budgets line by line. During this process, the state department might fund programs that have a relatively low priority at the expense of other, higher priority programs. It also can curtail the influence of a developer by restricting its approval for model 'extras' such as parental incentive moneys. As the administrator in one of our study sites concluded, "There has been a disconnect between Whole School Reform implementation and the DOE-imposed [budget process]."

In conclusion, the New Jersey story points out the natural tensions and competing priorities that arise when a state becomes directly involved in school reform. The "horse trade" of more flexibility in exchange for greater performance accountability, developed as part of the standards-based reform movement, gets redefined. Concerned that schools cannot or will not implement needed reform, the state becomes more prescriptive, holding schools accountable for whole school model selection and budgetary decisions, rather than student achievement. This micro-management, in turn, limits the flexibility of schools to design programs and allocate resources in ways that the school community may feel is necessary to meet the needs of its students. The growing state role also raises more fundamental questions about what is, and should be, the appropriate balance of power and authority among schools, model developers, school districts and the State.

ACKNOWLEDGMENT

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NOTES

1. *Abbott v. Burke,* 710 A.2d 450, 455 (1998) (*Abbott V*). See Goertz and Edwards (1999) for a complete history of New Jersey's school finance cases.
2. The thirty *Abbott* districts are the following: Asbury Park, Bridgeton, Burlington City, Camden, East Orange, Elizabeth, Garfield, Gloucester City, Harrison, Hoboken, Irvington, Jersey City, Keansburg, Long Branch, Millville, Neptune, New Brunswick, Newark, Orange, Passaic City, Paterson, Pemberton Township, Perth Amboy, Phillipsburg, Plainfield, Pleasantville, Trenton, Union City, Vineland and West New York.

3. New Jersey has a classification system of its more than 600 school districts based on an aggregation of census data from the following indicators: percent of population with no high school diploma, percent with some college, occupation, population density, income, unemployment, and poverty. Abbott districts are a subset of the lowest two categories.
4. A more detailed report of our study can be accessed at http://policy.rutgers.edu/cgs/pubs.htm under the title, *Implementing Whole School Reform in New Jersey: Year Two* by Bari Anhalt Erlichson and Margaret Goertz.
5. The illustrative budgets for 2001–2002 increased the number of classroom teachers for all models to 20, and the number of specialists to 5. They no longer specify salary and benefit costs, however.
6. We also analyzed middle school budgets and found similar patterns.

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CHAPTER 4

BALANCING THE BOOKS

The Relationship Between Fiscal Condition, Educational Output, and District Competition in the Metropolitan Districts of Minnesota

Nicola Alexander

INTRODUCTION

> It's one thing to have a budget reserve, it's another to be building up bank accounts. I don't believe it's government's role to be building up bank accounts ... [The cities] need to be commended that they have this money if they have it. Was it prudent management, or was it overtaxation. [sic] You've got to ask this question ... I suppose that you could define that either way, depending on which chair you're sitting in. But is it right? They claim these reserves are for a rainy day. Wouldn't this qualify as raining? [Jesse Ventura, Governor of Minnesota in an interview on the state budget and taxes, Associated Press, December 16, 2001, downloaded from startribune.com].

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The "Minnesota miracle"[1] is over. The state is projected to have a deficit amounting to 2.3 billion dollars, which is about 9% of its budget (MN House of Representatives, 2002). The fiscal crunch is felt keenly in the state's 343 school districts, which had already experienced declining real revenues in the midst of overall state economic growth. With the state contributing about two out of every three operating dollars expended per K–12 student, the worsening economy seems a harbinger of even more belt-tightening on the part of schools.

The challenges of dwindling resources are compounded for those organizations that serve high proportions of students requiring additional support, including children with learning disabilities, children who are English language learners, and children from low-income households.[2] The overlapping constraints of low resources and high-need student populations are no more clearly seen than in the 27 school districts located in the greater metropolitan area surrounding the Twin Cities and covering 11 counties. Collectively, these districts serve one-third of all elementary and secondary students educated in Minnesota. In 2002, they schooled 74.8% of students participating in free and reduced lunch programs; 75% of students in English language learning; and 31% of all special education students in the state.

Policymakers in these 27 urban and suburban districts have devised creative ways of managing resources more effectively. Business strategies are becoming an increasingly popular path to reform, as districts are being held more accountable for financial decisions and student achievement. The response of district officials of having to be both efficient in their use of inputs and effective in the outputs produced ranges from hiring business consultants (Grow, 2001) to implementing participatory decision making through site councils (cf. Office of Site-based Improvement, 2000). Finding the right balance between fiscal accountability and student performance is especially important in Minnesota where state dollars follow the public school student via the various choice mechanisms available in the state. The next section describes important legislation that affects choice and accountability in Minnesota, as well as the financial implications therein.

CHOICE AND ACCOUNTABILITY IN MINNESOTA

The early 1980s is the backdrop for major restructuring of K–12 education in Minnesota. Various special interest groups, including the Citizens League and Business Partnership, sponsored research calling for deregulation of the public education enterprise. From these efforts, the *Minnesota Plan* was developed by Berman-Weiler Associates, which was hired by the

Business Partnership to evaluate the educational system in the state. The report called for several fundamental changes in elementary and secondary education, including vouchers to allow 11th and 12th graders to choose between public and private schools. This recommendation evolved into the post-secondary enrollment option bill introduced in the state legislature in 1984 and supported by then Governor Perpich (Mazzoni, 1991). This statute gives "public school 11th and 12th graders the choice to seek to attend any public or eligible private post-secondary institution, part- or full-time, receiving both state and high school credit at state expense" (1991, p. 134). By school year 1991, the choice options available for students widened considerably, and comprehensive open enrollment was mandated for all districts. The statute required districts to permit their resident students to attend other districts, though a receiving district could refuse a nonresident student based on capacity limitations or desegregation regulations. The introduction of charter schools followed shortly after in 1992, increasing the competition among traditional public schools for students and state dollars.

Along with the choice mechanisms described above, state policymakers introduced various statewide assessments to ensure that all high school graduates had a basic level of knowledge and skills in reading and Mathematics. The Basic Standards Test was introduced in 1996 to be taken by students in the 8th grade and is a condition for graduating from high school. Students who fail the Basic Skills exam are required to take it again until a satisfactory grade is earned.

The purpose of this chapter is to examine associations between financial condition, relative student achievement, and district competition in the 27 metropolitan districts in Minnesota. This analysis is descriptive rather than predictive and is used as a means to inform the debate on the role that finances and school performance may play in the competition for students. This topic is important on three fronts. First, it extends the debate regarding "does money matter" by more explicitly tying financial indicators to measures of student achievement. Second, the discussion explores how fiscal accountability, district competition and student achievement are related and the implication of these relationships for educational policy. Third, it highlights important financial considerations faced by many urban school districts in a time of shrinking funds and rising demand. Four questions frame the research:

1. What is the relative financial condition of the 27 metropolitan districts in Minnesota? As in standard accounting contexts, financial condition refers to the ability of a jurisdiction to meet its fiscal obligations given its resources. It is assumed that it is not only the level of funding that matters (Hanushek, 1992), but the way in which these

funds are managed. This is a different question from the one posed by Monk, Roellke, and Brent (1996) as well as Alexander (2000), which examined issues of resource allocation rather than fiscal accountability.

2. What is the relationship between the relative financial condition of these 27 school districts and their relative level of educational output? It is assumed that those districts that are able to balance well the various demands on their fiscal resources will also be able to assign their resources in a way that will generate the greatest productivity, as measured by student performance on statewide standardized tests and district dropout rates.
3. What is the role of fiscal accountability and achievement in the competition for students? It is assumed that those districts that have relatively higher scores on achievement and financial scales will attract more out-of-district enrollment and thus garner more state funds.
4. What are the financial factors that are most troubling to urban school districts in balancing their obligations with their resources? What is the role of the state, if any, in alleviating these concerns? For instance, in the past year there have been a record number of school district referenda to raise funds. This suggests that educational policymakers in these jurisdictions are not fulfilling their responsibility at the current levels of resource. This could be because of mismanagement, insufficient funding, or both (Smith, 2001).

The remainder of this chapter has four sections. Section I is a synthesis of the literature on resource allocation, student achievement, accountability and school choice. It describes the results of previous research, identifying questions that remain and discussing how the present study can serve to fill the gaps. The issues identified here help inform the debate on accountability in the educational arena, whether it is in terms of fiscal responsibility, student performance, or the use of choice mechanisms. Section II describes the research design that frames this study. This discussion includes a description of the data and the methods used to address the questions asked above. Section III presents the findings of the analysis. Section IV summarizes the key points of the previous sections and concludes with policy implications and avenues for future research.

EXAMINING WHAT WE KNOW

Accounting for Student Achievement

One issue that has long dominated the education finance literature is the debate on the importance of money in the achievement of quality outcomes—"does money matter?" There is no clear-cut answer. On the one hand, Hanushek (1989, 1991, 1995) concludes that there is no consistent relationship between school expenditures and student outcomes. On the other hand, in a later reanalysis of data used by Hanushek, Hedges et al. (1994) conclude that there is strong support for the positive effects of school inputs (i.e., money).

The inconclusive nature of the research prompted many researchers to explore the question of *how* money matters to student achievement. In other words, what is the relationship between the resources purchased and the output achieved? Since researchers from both camps—money matters, money does not—agree that all roads do not lead to higher educational achievement, focusing on allocation rather than appropriation[3] (cf. Monk, Roellke, & Brent, 1996) is an important step in moving the literature forward.

However, allocation issues cannot be fully separated from issues of appropriation because the level of funding often determines the spending options that are available (Kozol, 1991). Often missing from the literature is explicit discussion on how the balance between resource levels and funding choices can affect student outcomes. Quite often, it is assumed that the most productive jurisdictions are also the best fiscally managed. However, as noted by researchers and policymakers elsewhere, being good on the production side of the equation (student output) does not necessarily make one a good finance administrator. The opposite is also true. For instance, a newly hired chief operating officer for the Minneapolis public schools notes:

> When the district was run previously by a businessperson, that firm [Public Strategies] was running the entire operation. Since then, an academic person has been running both sides of the house. What makes this new arrangement different is that there's a businessperson running the business side and an academic person running the academic side. In difficult budget times, when there's a commitment to, number one, resolve the deficit, and number two, to do so without disrupting the efforts in the classroom, it seems like having the A-team in both sides of the house might be an important thing (as cited in Shah, 2001).[4]

As implied, the fiscal condition of districts has far-reaching implications for the ability of jurisdictions to achieve their goals. Numerous examples abound to illustrate these implications. First, the debt structure of a district often affects its ability to make capital investments and initiate new technology. Second, existing revenues may affect the capacity of districts to raise even more funds and its ability to meet changing operating needs. Third, the flow of resources in and out of a community can affect perception of its effectiveness and, in turn, the "clientele" it is able to attract (Draper, 2001). This latter point is especially important for districts in a state like Minnesota where open enrollment exists and state funds follow the student.

Competing for Students: Implications for Funding

It is assumed that choice mechanisms allow the educational system to be self-regulating and better able to match the different needs of students with the educational services supplied by the district. Districts that meet the needs of their clientele will do well in the competition for students; those that do not, will not (cf. Nathan, 1998). This argument assumes that increased flexibility in the school arena will lead to a greater and more diverse supply of schools. In turn, larger numbers of schools are assumed to result in greater competition among these educational institutions, generating increased innovation, more efficient use of resources, and greater responsiveness to parents and students (Geske et al., 1997).

The claim of increased accountability implied by the above arguments ignores the potential disconnect between individual satisfaction and the expressed societal purpose of improving student achievement. For instance, in Minnesota there is anecdotal evidence of parents voting against a levy in their "home" district with plans to send their child to a neighboring district that spends relatively more on schools.[5] When the dollars contributed (e.g., from local levies) are not directly tied to the service received (e.g., district schooling), then the efficiency in allocation associated with the price mechanism is absent. Moreover, even where the needs of the individual clientele (i.e., parents and students) are congruent with the goals of the broader community, the accountability provided by market mechanisms may be inadequate. Bowles (1991) suggests, for example, that in complex transactions (of which schooling may be considered an example), there is no market equilibrium. Thus the self-regulating ability ascribed to a pure market approach to accountability may be illusory. This leads to the question of the role that the state can play in helping school districts to balance their financial books and enhance student performance.

DATA AND METHOD

Data

This study relies upon school district data provided by the Minnesota Department of Children, Family, and Learning for school year 1999–2000. The financial data are derived from the comprehensive annual financial report and the current general-purpose financial statements of the school districts. Measures of achievement are operationalized by the percentage of dropouts in the district and the percentage of grade 8 students who have passed the 8th grade Basic Standards test by scoring above 600 points. This test is mandated for all pupils in the 8th grade and students are required to pass this examination before graduating from high school. The demographic, financial, and academic information provided by the state is supplemented by data provided on the website of the Association of Metropolitan School Districts. This includes the number of students served by those districts and demographic trends in the metropolitan jurisdictions relative to the state as a whole.

This study relies on multiple methods to address the questions being asked. The crux of the analysis relies on a modified version of the 10-point test of financial condition developed by Ken Brown in 1993. The original test allows finance officers to compare 10 key financial ratios for their city to ratios calculated for 750 similar cities across the nation. An underlying assumption of the framework is that a jurisdiction has a limited ability to know how well or badly it is doing except by comparison with similar jurisdictions. In Minnesota where choice mechanisms have funding implications, it is important to know what and how well your neighbor is doing. In this case, the natural comparison group for these 27 metropolitan districts is each other. The ratios used in the analysis cover the essential financial factors for determining the financial condition of a jurisdiction—revenues, expenditures, operating position, and debt structure. Much of the interpretation of the ratios aligned with these factors draws from the literature on financial management.

Indicators of Revenues

Using Brown's framework, there are three ratios that inform us about the inflow of resources into the jurisdiction. Indicators of revenues include (1) total revenues per capita, (2) the ratio of general fund revenue from own sources to total general fund revenues, and (3) the ratio of the dollar amount of general fund sources from other funds to total dollars from the general fund. It is assumed that a lower level of per capita revenues translates into a greater ability of the jurisdiction to raise additional revenue. If a jurisdiction has most of its general fund revenue raised from its own sources, it is considered to be in a stronger position financially because it is less reliant on external governmental organizations. By contrast, it is better for a jurisdiction to have a low ratio of general fund sources from other funds relative to the total. This is because that suggests that the jurisdiction does not have to rely on operating transfers to finance general government operations in the general fund.

Indicators of resource outflow. The outflow of resources from the district is captured by the ratio of operating expenditures to total expenditures, and the financial management literature suggests that a low ratio is favorable. This is because the lower the portion of the total expenditures for the general, special, and debt service funds is of the total governmental funds, the more likely it is that the infrastructure is being maintained adequately. Note that in this context the category of operating expenditures is not synonymous with spending on instruction. Rather, it includes items that often comprise current expenditures, including dollars for administrative and transportation services if they are part of the governmental fund.

Indicators of Operating Position

The operating position of an organization describes its pattern of resource use and availability. This is an important consideration because it allows one to assess how well the organization is positioned to meet existing obligations with current resources. The operating position of the jurisdiction is captured by three ratios—(1) the relationship between total revenues and total expenditures, (2) the ratio of unreserved fund balance to total general fund revenues, and (3) the ratio of total general fund cash and investments to total general fund liabilities. It is assumed that a high ratio of revenues to expenditures is a good thing because that would mean that the district had a positive cash balance. However, in the present fiscal climate, a high ratio is sometimes perceived negatively by taxpayers and may inhibit the capacity of districts to maintain its current levels of funding. For example in Minnesota, taxpayer groups and the governor of that state often point to the excess of revenues over expenditures as an indication that too much money was taken from taxpayers (Polls, 2002).

The ratio of unreserved general fund balance to total general fund revenues indicates the ability of the district to overcome a temporary shortfall in revenues. It is assumed that a high ratio reflects a more favorable fiscal condition because it suggests that the district has the flexibility to meet unexpected fiscal challenges. To the extent that the general fund balance is reserved for particular programs, these dollars may not be sufficientl fungible to be allocated in a way that they are the most productive given changing circumstances. Similarly, having a high ratio of cash and investments relative to liabilities is considered to be good because it suggests that the district will have sufficient cash with which to pay short-term obligations. This allows the jurisdiction to avoid having to borrow high-interest short-term loans in order to meets its obligations. The opportunity cost of not having to make these interest payments can translate into additional funding for instruction.

Indicators of Debt

Debt is not necessarily a bad thing and may be essential for ensuring intergenerational equity when capital investments are made; however, it is inappropriate to use debt to cover operating costs. Brown's framework calls for three ratios to reflect the debt structure of the jurisdiction. These are (1) the ratio of total general fund liabilities to total general fund revenues, (2) direct long-term debt per capita, and (3) the ratio of debt service payments to total revenues. The fiscal condition of a district is often considered in a favorable light if it has a low ratio of general fund liabilities to general fund revenues because that suggests that short-term obligations can be serviced easily by the normal flow of annual revenues. Similarly, a low level of per capita direct long-term debt is considered good because it suggests that the jurisdiction has the ability to repay its long-term debt. Having a low ratio of debt service payments relative to total revenues is positive indicator of sound fiscal condition because it suggests that the jurisdiction will be able to pay its debt service requirements when due.

Application of the Framework

Because school districts are being studied rather than cities, the present study modifies Brown's framework in the following ways:

- Analysis is based on a comparison of key financial ratios for the 27 metropolitan districts not a database of similarly sized cities across the nation.
- Population is operationalized as average daily membership not the number of residents in the jurisdiction.
- Educational output, as measured by pass rates in the Minnesota Basic Standards Test in Math and Reading as well as district dropout rates, is included as part of the analysis so that the relationship between fiscal management and performance may be explored.

A limitation that remains with the above analysis is the cross-sectional nature of the study. The research would be strengthened if long-term trends were examined and the changes in the fiscal condition of the districts were noted. In addition, expanding the data base to include all school districts in Minnesota could inform discussion about how urban school districts are faring relative to non-urban ones. That analysis is beyond the scope of the present research, however. Another limitation is that measures of the financial condition of the district are discussed largely in relative terms, and there are no absolute standards of good or bad. The crux of the research does not suffer from this limitation because the focus of the discussion is the interplay between fiscal and output accountability in the competition for students. In competition, what matters it is often the relative standing of the competitors involved.

The results of the financial analysis will be used as the basis for addressing the relationships between student achievement and financial condition using a correlation matrix. The analysis is then extended to include the influence of district competition. Recall that this analysis is descriptive rather than predictive and is used as a means to inform the debate on the role that finances and performance may play in the competition for students. By looking at individual financial conditions, correlations between finance and student performance, as well as the role of finance and performance in the competition for students, a fourth issue can then be addressed. This is the potential role of the state in balancing the needs of school districts with low revenues and high resource needs in the backdrop of open enrollment and other choice mechanisms.

Scoring Technique

A key part of the application of the analytical method developed by Brown (1993) is the assignation of a score to each district based on its ranking on a particular financial indicator. The overall assessment of a district's financial condition relative to its neighbor is based on a comparison of the overall scores. For each ratio, a score of negative 1 was assigned if the district was in the quartile that fared the worst on that measure. Districts that were in the quartile that scored the second worst were assigned a score of 0 on that particular measure. Districts that were in the quartile that ranked second best on a particular measure received a score of 1; those districts that were in the top quartile were assigned a 2 on that ratio.

In reading the findings, it is important to recognize that districts do not always fare well in having a high ratio on a particular indicator. For instance, districts that have higher proportions of their revenues obtained from local sources are considered to be more financially sound than districts that have lower proportions of this measure. By contrast, districts that already have large revenues per pupil are considered worse off financially than those districts that have lower levels of this measure. To facilitate the analysis, Table 1 contains a listing of the relevant financial indicators, detailing whether higher values of the particular ratio place districts in relatively better or worse positions.

Table 1. Indicators of Financial Condition and Assessment of Values

Fiscal Ratios	*Higher values*
Indicators of revenue	
1. Total revenues: Enrollment	Bad
2. Total general fund revenues from own sources: Total general fund revenues	Good
3. General fund sources from other funds: Total general fund sources	Bad
Indicator of resource outflow	
4. Operating expenditures: Total expenditures	Bad
Indicators of operating position	
5. Total revenues: Total expenditures	Good
6. Unreserved general fund balance: Total general fund revenues	Good
7. Total general fund cash and investments: Total general fund liabilities	Good
Indicators of debt	
8. Total general fund liabilities: Total general fund revenues	Bad
9. Direct long-term debt: Enrollment	Bad
10. Debt service: Total revenues	Bad

Source: Compiled by author from analysis done on the above variables using 1999–2000 data obtained from the Minnesota Department of Children, Families, and Learning.

FINDINGS

The data in Table 2 presents descriptive statistics on the financial indicators and measures of aggregated student achievement used in the analysis. The data suggest that there is large variation among the districts, especially in terms of their debt structure and flexibility in their fund balances. This variation implies that some districts will be much better positioned to meet the challenges of constricting state aid, aging infrastructure, and increased voter resistance to additional levies (cf. Draper, 2001). School districts with less favorable financial indicators may be caught in a "double whammy" where their poor financial condition leads to less educational investment, which in turn worsens their financial woes.

Table 2. Indicators of Financial Condition and Student Performance for the 27 Metropolitan Districts In Minnesota, 1999–2000

Fiscal Ratios	*Mean*	*Standard Deviation*	*Coefficient of variation*	*Minimum*	*Maximum*
Indicators of revenue					
1. Total revenues: Enrollment	9439	1446	.153	8042	14671
2. Total general fund revenues from own sources: Total general fund revenues	.965	.023	.024	.899	.988
3. General fund sources from other funds: Total general fund sources	.001	.003	3	0.000	.017
Indicator of resource outflow					
4. Operating expenditures: Total expenditures	.842	.109	.129	.568	.997
Indicators of operating position					
5. Total revenues: Total expenditures	.906	.109	.120	.604	1.033
6. Unreserved general fund balance: Total general fund revenues	.020	.098	4.9	-.003	.510
7. Total general fund cash and investments: Total general fund liabilities	.375	.151	.403	.000	.649
Indicators of debt					
8. Total general fund liabilities: Total general fund revenues	.165	.037	.224	.096	.237
9. Direct long-term debt: Enrollment	17588	9930	.565	952	38332
10. Debt service: Total revenues	.065	.034	.523	.000	.139
Measures of student achievement					
Dropout rates in percent	2.485	2.655	1.068	.0800	10.25
Percent of grade 8 passing Basic Standards Test in Reading	80.65	10.86	.1347	51.00	94.00
Percent of grade 8 passing Basic Standards Test in Math	74.46	12.51	.168	42.00	91.00

Source: Compiled by author from analysis done on the above variables using 1999–2000 data obtained from the Minnesota Department of Children, Families, and Learning.

Financial Condition of the Districts

The financial condition of the metropolitan districts of Minnesota is mixed, and there are key areas of concern. On average, most of their general fund revenues are raised from their own sources, and they rely little on operating transfers from other funds to finance general government operations in the general fund. However, their ratio of operating expenditures to total spending suggests that the infrastructure of districts is being neglected to meet current obligations. Moreover, in school year 1999–2000, 26 of the 27 districts (Mahtomedi was the exception) were operating with a deficit, where current expenditures exceeded current revenues. While the metropolitan districts are able to cover current short-term obligations, the generally low ratio of unreserved fund balance suggests that they will not long have this capacity. In short, the districts seem ill equipped to meet unexpected fiscal challenges and have only a moderate ability to meet short-term obligations.

Table 3 presents information on the flow of resources for the 27 metropolitan districts in the state of Minnesota. Intermediate district #287 faces the greatest challenges in raising additional funds. This district is unique in that it is essentially a consortium of other districts and is unable to generate its own revenues through taxation. Minneapolis and Saint Paul, the two largest and most urban districts in the state, have similar concerns regarding their potential to raise additional revenues. These three districts already have relatively high levels of per-pupil revenues and rely more heavily on funding from external governmental sources, including Title I funding, than neighboring jurisdictions.

By contrast, Bloomington and Hopkins seems to be in the best position financially to raise more funds because they have relatively low levels of per-pupil expenditures and rely heavily on their own revenue sources. This suggests that they have not fully tapped the pool of resources that may be used for funding education and will have a better chance of having a successful referendum than the other districts.[6] This analysis, however, ignores the possibility that low per-pupil revenue may be a reflection of a low demand (or little taste) for education as opposed to being an indicator of an untapped pool of resources.

Table 4 provides information on the ratio of total expenditures that are spent on operational expenses. In this context, the lower the ratio, the more likely it is that money has been spent on maintaining and investing in the infrastructure of the district. Intermediate district #287 again seems to have strong indicators of financial concern. Very little of its expenditures go toward maintaining the infrastructure of the jurisdiction. Other districts for which this seems to be of concern are Brooklyn Center, Burnsville, Fridley, Hopkins, Mounds View, and Roseville.

Table 3. Financial Indicators of Revenues, Per-Pupil, Own Source, and Other Funds, 1999–2000

District	*Per-pupil revenues*	*Rank*	*Own source revenues*	*Rank*	*General revenues from other funds*	*Rank*
Bloomington	9,648	7	0.9877	3	0.0017	3
Brooklyn Center	9,116	15	0.9614	22	0.0000	7
Burnsville			0.9710	13	0.0000	7
Chaska	8,680	17	0.9305	25	0.0000	7
Columbia Heights	9,216	14	0.9637	20	0.0048	2
Eden Prairie	8,611	18	0.9855	5	0.0000	7
Edina	9,480	8	0.9882	1	0.0000	7
Fridley	8,529	19	0.9617	21	0.0000	7
Hopkins	9,781	6	0.9804	6	0.0000	7
Mahtomedi	8,078	25	0.9762	10	0.0000	7
Minneapolis	12,057	2	0.9427	24	0.0173	1
Minnetonka	9,415	10	0.9878	2	0.0000	7
Mounds View	8,428	22	0.9697	14	0.0000	6
North St. Paul/M/O	8,113	24	0.9694	15	0.0000	7
Orono	8,910	16	0.9866	4	0.0000	7
Osseo	8,509	20	0.9692	16	0.0000	7
Richfield	9,237	13	0.9675	18	0.0000	7
Robbinsdale	9,352	12	0.9753	11	0.0000	7
Roseville	9,952	5	0.9787	9	0.0000	7
St. Anthony	9,398	11	0.9690	17	0.0000	7
St. Louis Park	11,512	3	0.9788	8	0.0000	7
St. Paul	10,485	4	0.9026	26	0.0007	5
Shakopee	8,042	26	0.9446	23	0.0000	7
South St. Paul	8,478	21	0.9658	19	0.0000	7
Spring Lake Park	8,306	23	0.9732	12	0.0016	4
Wayzata	9,416	9	0.9798	7	0.0000	7
Intermediate Dist. #287	14,671	1	0.8985	27	0.0000	7

Source: Computed by author from data obtained from the Minnesota Department of Children, Families and Learning for 1999–2000.

By contrast, Chaska, Columbia Heights, Eden Prairie, Orono, Shakopee, and South Saint Paul have among the highest proportions of their budget expended on non-operating items. This suggests, for example, that less money will have to be expended in the future on building upgrades as well as the possibility of reduced heating costs due to better insulated structures and the infrastructure needed to use technology more efficiently.

Table 4. Financial Indicators of Expenditure

District	*Portion operating expenditures*	*Rank*
Bloomington	0.848	18
Brooklyn Center	0.964	2
Burnsville	0.932	3
Chaska	0.746	23
Columbia Heights	0.568	27
Eden Prairie	0.761	22
Edina	0.849	17
Fridley	0.929	4
Hopkins	0.926	5
Mahtomedi	0.904	10
Minneapolis	0.795	19
Minnetonka	0.857	16
Mounds View	0.925	7
North St. Paul/M/O	0.869	15
Orono	0.578	26
Osseo	0.886	12
Richfield	0.891	11
Robbinsdale	0.773	21
Roseville	0.926	6
St. Anthony	0.878	13
St. Louis Park	0.924	8
St. Paul	0.875	14
Shakopee	0.719	24
South St. Paul	0.687	25
Spring Lake Park	0.923	9
Wayzata	0.792	20
Intermediate Dist. #287	0.997	1

Source: Computed by author from data obtained from the Minnesota Department of Children, Families and Learning for 1999–2000.

Table 5 presents data on the operating position of the metropolitan districts for school year 1999–2000. Columbia Heights, North Saint Paul, Richfield, and Intermediate District #287 have very poor capacity to overcome temporary shortfalls in revenues because of their very limited unreserved fund balance combined with relatively low portions of cash and investment. By contrast, Bloomington is the only district that scores in the top quartile of both measures, an indication that this jurisdiction is well positioned to meet unexpected fiscal challenges.

Table 5. Financial Indicator of Operating Position, 1999–2000

Districts	*Operating spending as portion of total*	*Rank*	*Revenue/ Expenditure ratio*	*Rank*	*Portion of fund balance that is unreserved*	*Rank*
Bloomington	0.8734	19	0.0068	3	0.6026	2
Brooklyn Center	1.0333	1	0.0135	2	0.3910	13
Burnsville			0.0000	14	0.5249	5
Chaska	0.8294	22	0.5099	1	0.2726	22
Columbia Heights	0.6043	26	0.0000	16	0.2113	25
Eden Prairie	0.9038	18	0.0043	5	0.4458	9
Edina	0.9480	11	0.0000	24	0.5580	4
Fridley	0.9816	8	–0.0001	25	0.4268	11
Hopkins	0.9346	14	0.0001	11	0.3080	20
Mahtomedi	0.9921	4	0.0001	12	0.4705	6
Minneapolis	0.8522	21	0.0000	16	0.3480	17
Minnetonka	0.9483	10	0.0000	16	0.3689	16
Mounds View	0.9900	6	0.0048	4	0.3108	19
North St. Paul/M/O	0.9246	16	0.0000	16	0.2670	23
Orono	0.6544	25	0.0000	13	0.4502	8
Osseo	0.9827	7	0.0013	7	0.4399	10
Richfield	0.9401	12	–0.0006	26	0.2465	24
Robbinsdale	0.8543	20	0.0006	9	0.3828	14
Roseville	1.0214	2	0.0000	16	0.3240	18
St. Anthony	1.0119	3	0.0006	8	0.3701	15
St. Louis Park	0.9380	13	–0.0026	27	0.5827	3
St. Paul	0.9320	15	0.0000	16	0.3931	12
Shakopee	0.8053	23	0.0013	6	0.0005	27
South St. Paul	0.7194	24	0.0000	15	0.0456	26
Spring Lake Park	0.9731	9	0.0005	10	0.4625	7
Wayzata	0.9057	17	0.0000	16	0.6490	1
Intermediate Dist. #287	0.9913	5	0.0000	16	0.2807	21

Source: Computed by author from data obtained from the Minnesota Department of Children, Families and Learning for 1999–2000.

Table 6 contains information on the debt structure of the metropolitan districts for school year 1999–2000. Examining together the relative portion of general fund liabilities and debt service as a portion of revenues

Table 6. Financial Indicators of Debt Structure

District	*General fund liabilities as a portion of revenues*	*Rank*	*Per-pupil long-term debt*	*Rank*	*Debt service as portion of revenues*	*Rank*
Bloomington	0.183	9	23,507	7	0.033	23
Brooklyn Center	0.097	26	4,565	24	0.035	22
Burnsville	0.140	22	15,177	17		26
Chaska	0.222	2	34,135	2	0.096	5
Columbia Heights	0.197	6	26,687	6	0.087	7
Eden Prairie	0.188	7	29,163	4	0.125	2
Edina	0.202	5	13,358	18	0.093	6
Fridley	0.177	10	18,241	12	0.060	14
Hopkins	0.214	3	12,004	20	0.061	13
Mahtomedi	0.148	21	16,424	16	0.078	9
Minneapolis	0.211	4	3,749	25	0.019	24
Minnetonka	0.170	13	21,098	9	0.075	11
Mounds View	0.155	18	7,308	23	0.037	21
North St. Paul/M/O	0.149	20	17,851	13	0.059	15
Orono	0.185	8	20,162	10	0.078	10
Osseo	0.114	24	952	27	0.063	12
Richfield	0.153	19	27,811	5	0.112	3
Robbinsdale	0.162	14	10,465	21	0.014	25
Roseville	0.237	1	16,859	14	0.057	16
St. Anthony	0.172	12	9,306	22	0.052	17
St. Louis Park	0.158	16	38,332	1	0.048	18
St. Paul	0.159	15	16,749	15	0.048	19
Shakopee	0.117	23	23,492	8	0.105	4
South St. Paul	0.096	27	12,962	19	0.045	20
Spring Lake Park	0.156	17	19,772	11	0.079	8
Wayzata	0.176	11	33,222	3	0.139	1
Intermediate Dist. #287	0.111	25	1,530	26	0.000	26

Source: Computed by author from data obtained from the Minnesota Department of Children, Families and Learning for 1999–2000.

yields useful insight on the capacity of the districts to pay their debt. High ratios for each indicator suggests that districts are having difficulty meeting their short-term obligations and in paying their debt service requirements when due. Given their sound fiscal condition in other areas, it is a bit surprising that Eden Prairie, Edina, and Fridley seem to have the least sound debt structure among the metropolitan districts. By contrast, Brooklyn Center, Burnsville, Chaska, South Saint Paul, and Intermediate District #287 fare very well on this measure. Per-pupil long-term debt indicates the level of debt incurred in the "production process" of educating students. The higher the value of this ratio, the less likely resident taxpayers are willing to invest any more in the existing schooling process.

In Table 7 is the overall relative fiscal condition of the 27 metropolitan districts using Brown's scoring technique. For each ratio, a score of negative 1 was assigned if the district was in the quartile that fared the worst on that measure. Districts that were in the quartile that scored the second worst were assigned a score of 0 on that particular measure. Districts that were in the quartile that ranked second best on a particular measure received a score of 1; those districts that were in the top quartile were assigned a 2 on that ratio. For example, Bloomington was in the worst quartile on the first indicator, per pupil revenues, thus earning that district a score of –1 on that measure. The district with the highest score overall is in relatively more sound fiscal condition than its neighbors. The districts with the most positive indicators overall are Brooklyn Center, Mahtomedi, Osseo, Robbinsdale, and St. Anthony. Two jurisdictions seem to be faring particularly badly relative to the other metropolitan districts—Columbia Heights and Minneapolis, which border each other.

Table 7. Overall Fiscal Condition of Districts using Brown's Scoring Technique, 1999–2000

	Ratios										
District s	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*Total score*
Bloomington	–1	2	–1	1	0	2	2	0	–1	2	6
Brooklyn Center	1	–1	2	–1	2	2	1	2	2	2	12
Burnsville	na	1	2	–1	na	0	2	2	1	2	9
Chaska	1	–1	2	2	–1	2	–1	–1	–1	–1	1
Columbia Heights	1	0	–1	2	–1	–1	–1	–1	–1	1	–2
Eden Prairie	1	2	2	2	0	2	1	–1	–1	–1	7
Edina	0	2	2	1	1	–1	2	–1	1	–1	6
Fridley	1	–1	2	–1	1	–1	1	0	0	1	3
Hopkins	–1	2	2	–1	0	1	2	–1	1	0	5

Table 7. Overall Fiscal Condition of Districts using Brown's Scoring Technique, 1999–2000 (Cont.)

	Ratios										
District s	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*Total score*
Mahtomedi	2	1	2	0	2	1	2	2	1	0	13
Minneapolis	–1	–1	–1	1	–1	–1	0	–1	2	2	–1
Minnetonka	0	2	2	1	1	–1	0	0	0	0	5
Mounds View	2	0	–1	–1	2	2	0	1	2	2	9
North St. Paul/M/O	2	0	2	1	0	–1	–1	1	0	1	5
Orono	1	2	2	2	–1	0	1	0	0	0	7
Osseo	2	0	2	0	2	2	1	2	2	0	13
Richfield	0	0	2	0	1	–1	–1	1	–1	–1	0
Robbinsdale	0	1	2	2	–1	1	0	1	2	2	10
Roseville	–1	1	2	–1	2	–1	0	–1	0	1	2
St. Anthony	0	0	2	0	2	1	2	0	2	1	10
St. Louis Park	–1	1	2	0	1	–1	2	1	–1	1	5
St. Paul	–1	–1	–1	0	0	–1	1	1	1	1	0
Shakopee	2	–1	2	2	–1	2	–1	2	0	–1	6
South St. Paul	2	0	2	2	–1	0	–1	2	1	2	9
Spring Lake Park	2	1	–1	0	1	1	2	1	0	0	7
Wayzata	0	2	2	1	0	–1	2	0	–1	–1	4
Intermediate Dist. #287	–1	–1	2	–1	2	–1	–1	2	2	2	5

Source: Computed by author from data obtained from the Minnesota Department of Children, Families and Learning for 1999–2000.

Fiscal Condition, Educational Productivity, and the Competition for Students

Districts are evaluated in part by their ability to attract students to their schools. They are considered to be more competitive the higher the percent of resident students that opt to be schooled in the district and the higher the percent of nonresident students that the district is able to attract. A useful summary ratio of the competitiveness of districts is provided by the number of students served as a percent of the number of students residing in the district. If the district serves its entire population of resident students or the number of students leaving exactly equals the number of students entering, this percent is 100. In the competition for students, districts are in a more favorable position the higher this number is. Districts are able to increase this ratio by serving more of their resident students, attracting more out-of-district students, or some combination of both. Preliminary analysis suggests that the competitive position of districts is more strongly influenced by their ability to attract students from outside of their jurisdiction rather than in retaining the students that they already have.[7]

Table 8 contains data on district enrollment by resident and nonresident ADMs served and provides the ranking of districts in terms of the three measures of competitiveness identified above. As noted, Intermediate district #287 is a specially formed coalition of districts and all its students are, by definition, from outside. Only two districts were able simultaneously to attract high percentages of nonresident ADMs and serve high percentages of its resident students. These are Orono and Edina. Brooklyn Center stands out because it fared badly on the percent of resident students that stayed in the district (rank = 23), but still ranked second overall in the total number of students served as a percent of resident ADMs.

While descriptive data on measures of competitiveness can inform districts which group is best targeted to increase enrollment (and thus funding), this analysis is more concerned with the relationship of fiscal accountability and educational productivity with competitiveness. Because the bottom line for district funding is the number of students served, a good summary for the measure of competitiveness is the number of students served as a percent of resident ADMs. Enrollment figures by themselves would paint a distorted picture of district success in competing for students relative to their capacity. That is, bigger districts may look as if they are doing better competitively than they are in reality.

Using the overall fiscal score, the percent of students served relative to resident students, and district measures of student achievement, Table 9 provides data on the correlation between fiscal condition, competitiveness, and district efficacy. As expected, districts that appear to be in relatively sound fiscal condition are more likely to retain or attract more students to their jurisdiction ($r = .429$), have lower dropout rates ($r = -.34$) with concomitantly higher pass rates in the Basic Standards Test for Reading and Math ($r = .356$ and .385, respectively).

The relationship between measures of fiscal accountability and competitiveness is stronger than the correlation between competitiveness and measures of education performance. This suggests that while educational achievement plays a role in the ability of districts to attract students, the perception of sound fiscal management may have more of a pull. A limitation of this conclusion is that competition may look different for a district bordering several others than a district with only one neighboring district within commutable distance. If location plays a role, then finance and student performance are not the only considerations, and omission of a variable capturing the number of commutable districts may lead to a omitted variable problem in statistical analysis.

Table 8. District Enrollment by Resident and Non-resident ADMs Served, 1999–2000

	Resident ADMs served	*Total resident students*	*Total students served*	*Percent of resident ADMs staying*	*Rank*	*Non-resident ADMs as percent of total*	*Rank*	*Students served as percent of resident ADMs (Summary measure)*	*Rank*
Bloomington	12,109	12,896	12,420	93.9	15	2.5	24	96.3	20
Brooklyn Center	1,497	1,641	1,965	91.2	23	23.8	3	119.7	2
Burnsville	12,896	13,493	13,301	95.6	6	3.0	20	98.6	17
Chaska	7,635	7,992	7,917	95.5	7	3.6	19	99.1	16
Columbia Heights	3,172	3,704	3,392	85.6	26	6.5	12	91.6	26
Eden Prairie	11,377	11,686	11,732	97.4	2	3.0	21	100.4	11
Edina	7,296	7,480	7,874	97.5	1	7.3	10	105.3	6
Fridley	2,471	2,691	2,989	91.8	19	17.3	4	111.1	3
Hopkins	8,800	9,589	9,776	91.8	20	10.0	7	102.0	9
Mahtomedi	3,427	3,528	3,532	97.1	3	3.0	22	100.1	12
Minneapolis	53,973	58,742	54,786	91.9	18	1.5	25	93.3	23
Minnetonka	8,585	9,065	8,712	94.7	11	1.5	27	96.1	21
Mounds View	13,363	13,901	13,879	96.1	5	3.7	18	99.8	14
North St. Paul/M/O	12,569	13,368	13,303	94.0	14	5.5	14	99.5	15
Orono	2,626	2,763	2,982	95.0	8	11.9	6	107.9	5
Osseo	24,234	25,563	24,949	94.8	10	2.9	23	97.6	18
Richfield	4,365	4,899	4,740	89.1	24	7.9	9	96.8	19

Table 8. District Enrollment by Resident and Non-resident ADMs Served, 1999–2000 (Cont.)

	Resident ADMs served	*Total resident students*	*Total students served*	*Percent of resident ADMs staying*	*Rank*	*Non-resident ADMs as percent of total*	*Rank*	*Students served as percent of resident ADMs (Summary measure)*	*Rank*
Robbinsdale	14,686	16,592	15,468	88.5	25	5.1	16	93.2	24
Roseville	7,135	7,581	7,574	94.1	13	5.8	13	99.9	13
St. Anthony	1,201	1,270	1,714	94.6	12	29.9	2	134.9	1
St. Louis Park	4,586	5,026	4,818	91.2	22	4.8	17	95.9	22
St. Paul	51,023	55,844	51,779	91.4	21	1.5	26	92.7	25
Shakopee	4,145	4,292	4,434	96.6	4	6.5	11	103.3	7
South St. Paul	3,500	3,741	4,095	93.6	16	14.5	5	109.5	4
Spring Lake Park	4,305	4,609	4,736	93.4	17	9.1	8	102.8	8
Wayzata	9,877	10,396	10,446	95.0	9	5.5	15	100.5	10
Intermediate Dist. #287	0	0	3,733	–	–	100.0	1	–	–

Source: Computed by author from data obtained from the Minnesota Department of Children, Families and Learning for 1999–2000.

Table 9. Correlation between Fiscal Condition, Competitiveness, and Measures of Student Achievement

	Fiscal score	*Competitive score*	*Dropout rate*	*BST reading pass rate*	*BST math pass rate*
Fiscal score	1.000				
Competitive score	0.429	1.000			
Dropout rate	–0.340	–0.261	1.000		
BST reading pass rate	0.356	0.168	–0.864	1.000	
BST math pass rate	0.385	0.138	–0.847	0.970	1.000

Source: Computed by author from data obtained from the Minnesota Department of Children, Families and Learning for 1999–2000.

Table 10 is a graphical illustration of the relationship between the competitive stance of districts and their overall fiscal condition. The districts are grouped into quartiles for each variable. Columbia Heights, Minneapolis, and St. Paul are in difficult competitive and fiscal condition, while Brooklyn Center and St. Anthony fare well on both measures. Fridley and Robbinsdale are exceptions to the general pattern, where Fridley is able to attract a large percentage of students despite a relatively low fiscal score. By contrast, Robbinsdale is losing students despite its strong showing on fiscal accountability.

Table 10. Relation of Competitive Score and Fiscal Condition Score, 1999–2000, by Quartiles

		Competitive score, 1999–2000			
	Quartile	*Q1 Lowest quartile*	*Q2*	*Q3*	*Q4 Highest quartile*
Fiscal score, 1999–2000	*Q1 Lowest quartile*	Columbia Heights Minneapolis St. Paul	Chaska Richfield	Roseville	Fridley
	Q2	Bloomington Minnetonka St. Louis Park	North St. Paul	Hopkins Wayzata	Edina Shakopee
	Q3		Burnsville Mounds View	Eden Prairie Spring Lake Park	Orono South St. Paul
	Q4 Highest quartile	Robbinsdale	Osseo	Mahtomedi	Brooklyn Center St. Anthony

Source: Computed by author from data obtained from the Minnesota Department of Children, Families and Learning for 1999–2000.

DISCUSSION

Metropolitan districts in Minnesota are struggling with their operating position, which, in turn, has had a deleterious effect on their debt structure. On average, the ratio of operating expenditures to total spending is relatively high, suggesting little infrastructure maintenance and the potential for even higher operating costs in the future. Many of these districts are currently using their fund balance to make ends meet, but this pool of resources is likely to dry up if substantial changes are not made in expenditures, revenues, or both. Moreover, very little of the funding received by the districts is fungible, and little flexibility exists for district leaders to decide where is the best place to put increasingly scarce funds. These items combined have tightened the "debt service noose," and on average, for every $100 raised, districts spent $6.50 on principal and interest payments in 1999–2000.

Potential Role of the State in Addressing the Concerns of Districts

Those districts that are fiscally sound relative to their neighbors all have good debt structure and relative flexibility in their fund balance. These may be areas on which state policymakers should focus in an effort to help metropolitan districts during challenging economic times. However, it should be noted that these factors alone will not allow jurisdictions to continue in good standing unless there are strategies in place to ensure that a balanced operating position is maintained.

An overall examination of the fiscal condition of districts in the lowest quartile shows the different paths taken by these jurisdictions in the process of trying to match obligations and resources. Beyond the fact that the two largest and most urban districts (Minneapolis and St. Paul) are among those that are facing the most challenging fiscal circumstances, there is no clear-cut pattern regarding why those jurisdictions that are worse off are worse off. District size is seemingly not a factor, or if it is, its relationship with district fiscal condition is nonlinear. For example, Columbia Heights ranks 27th in terms of its fiscal condition and 23rd in terms of its size, while St. Anthony ranks third in terms of its fiscal condition and 27th in terms of its size. At the other end of the spectrum, Minneapolis ranks 26th in terms of its fiscal condition and first in terms of its size while Osseo ranks first in terms of its fiscal condition and third in terms of its size. Given these factors, state policymakers may be misguided in their assertion that districts financial woes are due to diseconomies of scale, at least in the metropolitan arena.

The positive association between poor fiscal condition and district ability to attract students is of special concern to jurisdictions that have low fiscal scores. Since funding follows the student, it is likely that dire financial times may be met by even harsher ones as students leave these "depressed" jurisdictions for more fiscally sound areas, further drying up already scarce resources. Given the potentially downward spiral that jurisdictions face (and the students who remain there), it is imperative for state policymakers to revisit issues of open enrollment and funding.

Discussions regarding the role of the state in assisting troubled school districts should also include an analysis on the effect of Minnesota regulations regarding district capacity and admission rules. Currently, districts are required to continue accepting students until their full capacity is reached. Capacity is measured by the average class size of the school and includes the number of students in both regular and special education classes. Because the latter classes tend to be smaller than average, very few schools (and thus districts) meet the capacity ceiling even when the average class size of regular classrooms exceeds 35.

Moreover, while open enrollment laws can allow students to "vote with their feet," there are also some unexpected consequences to this policy. For instance, there is anecdotal evidence suggesting that some families will oppose a levy in their "home" district with the intention of sending their child to a better-funded neighboring jurisdiction. The problem of "free riders" nullifies the efficiencies of choice and competition described by Tiebout (1956) by widening the wedge between payments made and benefits received. State policymakers must be careful that their regulations do not compound potential limitations of market mechanisms.

It is not clear how educational productivity and fiscal accountability factors interact to influence the competition for students. However, the notion that these variables are reinforcing seem to be supported by these analyses. It would be useful to expand the data set and the scope of the research to explore further the interaction between these variables and their potential association for the competition for students. The results of that analysis would add to the current debate on choice mechanisms and the role of competition in improving educational systems. It should be noted, however, that preliminary analysis suggests that fiscal accountability seems to play a greater role in the competition for students, which may be useful information to consider as policymakers in Minnesota revisit the laws governing charter schools.

With the state government cutting back on increases to Pre-K through 12 schools and tax wary citizens reluctant to pass more referenda, the fiscal condition for the 27 metropolitan districts will prove to be challenging. Educational leaders in those areas will be called upon more than ever to make tough choices on the best way to educate children. The balancing act between financing fiscal responsibilities, educational obligations, and competition for students continues.

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NOTES

1. The Minnesota Miracle is a term used to describe a period of economic expansion in the mid 1990s where unemployment was low and economic growth was high.
2. The literature on education indicates that there are individual student attributes that warrant additional funding on the part of the funding unit. Disabilities, limited English language proficiency, and being a member of an impoverished household are often included among the variables requiring additional funding. For more of this discussion, see for example, pages 92–97 of D.C. Thompson and R.C. Wood (2001) and pages 196–236 of A.R. Odden and L.O. Picus (2000).
3. Appropriations refer to the amount of dollars policymakers legislate for a particular program. This is usually a lump sum figure that represents maximum allowable expenditures for that category. Administrators are responsible for allocation, which often encompasses more detailed decisions regarding how money is used and concomitant questions of efficiency. See pp. 50–51, R.D. Lee, Jr. and R.W. Johnson (1998).
4. These sentiments were echoed in a talk presented by Paul T. Hill at the 23rd annual convention of the University Council of Education Administration and will likely be explored in further detail in the third book in the triology of urban educational reform published by Brookings Institution Press.
5. It is not clear how widespread this "free-rider" problem is in Minnesota, but it is certainly a concern of local school leaders. As state monies tighten and school boards increasingly go to their local jurisdiction, this concern will become even greater.
6. Recent voting in the metropolitan districts supports this analysis, and Hopkins and Bloomington were among the few metropolitan districts that had successful referenda over the last two years. See Draper (2002).
7. The Pearson coefficient of the relationship between the number of students served as a percentage of the number of resident students and the percent of resident students served is .228; this statistic is .931 for the percent of total students served that are nonresidents. Surprisingly, districts that are able to attract students from outside were less likely to retain their own resident students ($r = -.129$).

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CHAPTER 5

SCHOOL PERFORMANCE AND RESOURCE USE

The Role of New York City Public School Districts

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INTRODUCTION

State accountability systems as well as the system written into the reauthorized Elementary and Secondary Education Act rely on measures of performance to judge how well schools are educating their students. While the role of districts in financing schools is well known, relatively little attention has been paid to any other function the district might have in determining school performance. Advocates for school-based budgeting and school-based financing argue that educational policymaking and primary control over budgeting is best left to schools, with more limited responsibilities for districts in areas such as support services for joint purchasing or professional development. At the same time, the movements toward greater state

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financing and more stringent state accountability systems are strong forces shifting revenue raising and authority over curriculum from the district to the state level. Do districts continue to matter at all in how schools perform? Why and in what ways?

New York City provides an excellent laboratory in which to study these questions. New York City's elementary and middle schools are organized into 32 community school districts that receive resource allocations from the umbrella citywide school district that is dependent on the city government for revenues. State and federal funds, by and large, are channeled through the citywide district to the community school districts. Each district has a superintendent in charge of operations and instruction and in almost every respect, other than raising revenue, the districts function in a manner similar to independent school districts. Thus, the differences in school performance across these districts is not due primarily to differences in taxation and/or tax bases, but to differences in the effectiveness of schools and districts in dealing with their differing populations. This study uses data from New York City's public elementary and middle schools to examine the differences in school performance across school districts and to investigate the role of the districts in shaping school performance.

The chapter is organized as follows. In the next section we review the relevant literature on districts and accountability. In the following section we develop a model of the production of education. We then describe the data used in the analysis, present results on sub-city districts and on schools and conclude.

LITERATURE

In the past decade two-thirds of the states have developed accountability systems with most focusing more heavily on school rather than district performance. Of the 33 states that have statewide accountability systems, four hold only districts accountable for student performance, 13 hold both districts and schools accountable, and 16 place all of the accountability at the school level (Goertz, Duffy, & LeFloch, 2001). The policy and research focus, however, has been on holding schools accountable as illustrated by the 1996 volume on accountability entitled, *Holding Schools Accountable: Performance-Based Reform in Education* (Ladd, 1996a). The focus on schools is clear. Ladd writes in the introduction, "[M]any people believe that schools should be held more accountable for the academic performance of their students" (Ladd, 1996b, p. vii). Districts in large part are absent from the volume's papers, either because districts are not part of the school-based programs (e.g., Clotfelter & Ladd, 1996) or because the research focuses on schools. In the case of Mississippi, the state relies on relative performance categories to hold districts accountable through its accreditation process that has low incentives and low sanctions (Elmore, Abelmann, & Fuhrman, 1996). It is somewhat surprising that districts are not more fully considered in accountability systems that involve high stakes, such as financial incentives, promotion, or sanctions, given that districts serve at a minimum to coordinate educational services of their schools. Further, this oversight might lead to ineffective policies and/or sanctioning or rewarding of schools. Consider the possibility of two schools that in every respect may be similar, but differ in terms of performance. Is an accountability system fair if it does not include the district, given that the difference in performance between the two schools may be attributable to their districts?

Research on the production and costs of education has shifted from district-level analyses to school-level analyses as school-level data are increasingly available. Furthermore, the school is often the unit of analysis most appropriate for production related studies. As shown by Hanushek, Rivkin, and Taylor (1996), production functions may be biased when aggregated data are used and models are mispecified.

With regard to districts, other than their role in school performance, researchers have examined a wide variety of topics including district administrative spending, district consolidation and district size. Using a ten-year panel of data on district spending and performance in New York State, Brewer (1996) finds that educational performance is lower in districts with higher district administrative spending. The difference, however, is not statistically significant. School district consolidation is often proposed for smaller districts as a means by which they can lower their costs, taking advantage of economies of scale of the larger consolidated district. Districts with fewer than 500 students may benefit, in terms of cost savings, from consolidation (Duncombe, Miner, & Ruggiero, 1995). In terms of performance, smaller school districts moderate the negative relationship between socioeconomic factors and student performance (Howley, 2000). Using a single cross-section of data on public high schools in New Jersey, Fowler and Walberg (1991) find strong relationships between district socioeconomic status and high school performance. In her study of Ohio's public schools, Schwartz (1999) examines the role of districts in allocating funds across schools and contrasts district-based de facto allocation formulas to a simulated statewide funding system. She finds that districts do differ in their distribution of spending across schools, and that a statewide system for allocating resources would differ substantially from the current system by narrowing disparities in school spending policies across districts.

MODEL OF PRODUCTION OF EDUCATION[1]

The factors determining the output of schools and districts can be investigated using a production function to measure the maximum amount of output that can be produced from a given quantity of inputs. In its general form, the production function can be represented as:

$$Q = f(X_1, X_2, \ldots X_n) \tag{1}$$

where Q represents the quantity of output, X_1, X_2, ... X_n are the *n* inputs to production, and $f(.)$ is the transformation linking them. Historically, district-level analyses have dominated the research literature, largely because school-level data were seldom available across or within districts. Conceptually, school-level data are preferable for estimating production functions because they more closely represent the actual operation of schools within districts. But the choice between school-level and district-level analyses is not so clear-cut in efforts to use production function estimates to measure effectiveness. In this case we are interested in both, as schools operate within districts.[2] As we noted above, districts may well perform important functions that go beyond revenue raising, such as establishing and coordinating educational programs for students and teachers in the district's schools.

Using a three-year school-level panel of data on schools and districts that includes measures of school performance as well as average characteristics of students and resources, we first estimate the following model of production:

$$TS_{sdt} = \alpha_0 + \alpha_1 TS_{sdt-1} + \alpha_2 ST_{sdt} + \alpha_3 SC_{sdt} + \alpha_4 T + \alpha_5 D + \varepsilon_{sdt} \tag{2}$$

Where s indexes schools, d indexes districts and t indexes time and TS_{sdt} is output measured as average student achievement on tests. TS_{sdt-1} is output one period ago, ST_{sdt} is a vector of school and student characteristics, SC_{sdt} is a vector of school inputs (purchased or donated) and characteristics, T is a vector of time dummies, D is a vector of district dummies, and ε_{sdt} is an error term (or several error terms) with the usual statistical characteristics. The coefficients on the district dummies, D, are known as district fixed effects. These district effects (α_5) measure the residual variation in school output unaccounted for by variation in inputs across schools, student characteristics, etc. that is systematically related to a given district. Thus, these can be viewed as measures of technical efficiency—more specifically, the relative efficiency of the districts in the sample—*controlling for* differences in student and school characteristics.[3]

The district fixed effects capture the impacts of unobservable or unmeasured factors, but our data also include some observable information about the districts that might be important determinants of school performance.

These observable factors include district size, measured both by the number of students and the number of schools; average student performance in the district as indicated by test scores; average level of resources; and measures of resource use, such as percentages devoted to various functions. Estimating the impact of these characteristics on school performance can be accomplished in two ways. A two-stage method would first estimate the district-effects (α_5) in a model like (2) and then estimate a second regression explaining the variation in the district effects with the district characteristic variables described above. A second, and statistically more attractive method, includes the district-level variables in the first stage model, and estimates the impacts directly.[4] The estimated coefficients on these district-level variables, then, offer insight into what it is about districts that matters in relation to school production. Thus, Eq. (2) is modified as follows:

$$TS_{sdt} = \alpha_0 + \alpha_1 TS_{sdt-1} + \alpha_2 ST_{sdt} + \alpha_3 SC_{sdt} + \alpha_4 T + \alpha_5 DS_{dt} + \alpha_6 DT_{dt} + \alpha_7 DC_{dt} + \varepsilon_{sdt} \qquad (3)$$

where DS_{dt} is the average output of the district, measured as test scores, DT_{dt} is a vector of district characteristics, and DC_{dt} is a vector of average school inputs.

To estimate Eqs. (2) and (3), we use school-level data that provide the commonly-used measures of student and school characteristics and use robust standard errors to correct for clustering of schools within districts. In terms of outputs, there are multiple measures available from which to choose. The New York City Board of Education (BOE) tests students in grades three through eight, using citywide or statewide reading and mathematics exams. The two most commonly reported measures of outputs are the percent of students meeting a required level, often the nationally normed 50th percentile, and the average normal curve equivalent (NCE) score. The former is much easier to interpret, but the NCE score is preferable because it provides more information about the school's (or district's) overall performance rather than simply the proportion of students meeting a specific cutoff. Because tests and their standard deviations change across time, we standardize the scores in each grade tested to the citywide average for that grade by calculating a Z score,[5] which represents the distance between the score for a particular grade and the citywide average, relative to the standard deviation. We then average all the grade-specific Z scores to obtain a school-level average Z score.[6]

DATA

Sources

This study uses a three-year (1996–97 through 1998–99) panel of data obtained from two main sources, both publicly available through the New York City Board of Education (BOE). The *School Based Expenditure Reports* (SBER) provide rich and detailed data on school-level spending and a count of the number of full-time equivalent teachers in a school. For example, spending can be broken down by student type with spending on students who are in special education classroom settings on a full-time basis separated from spending on students in general education classrooms and their related resource room services. Additionally, the data contain a wealth of information on the functional purpose of the expenditures. The broadest categorization of spending breaks down expenditures into those that directly provide services to schools, those that provide for district administration and those that cover systemwide costs, such as debt service. Within each of these categories, there is information on the purpose of the expenditures. For example, direct services spending is broken down into more detailed categories such as classroom instruction, instructional support and leadership. Even finer detail on the functional purpose of spending is available within these categories. The *Annual School Reports* (ASR) provide school-level data on student and teacher characteristics and student performance. In addition to these two sources, the study uses data obtained directly from the BOE to augment measures of school-level student performance on citywide reading and mathematics exams, specifically data on individual NCE scores that are aggregated to the school level. District-level data are created from these school-level sources and are described below.

Sample Size

There are more than 1,100 public schools operating in New York City. Nearly 900 of these are elementary and middle schools organized in 32 community school districts while the rest are high schools or citywide special education schools.[7] The number of schools changes from year to year for a variety of reasons, reflecting the opening of new schools or the closing or reorganization of existing schools. We analyze school performance by school, including in the sample only schools with reading and mathematics test results in each of the three years. Of these 892 schools, we exclude 44 schools with missing data on test scores or missing data on a majority of the other analysis variables and two schools in a special district. Thus, a three-year (1997 through 1999) balanced panel data set includes 846 schools.

SUB-CITY SCHOOL DISTRICTS IN NEW YORK CITY

Other large urban districts, such as Chicago and Los Angeles, have some form of governance structure within that of the larger citywide district.[8] New York City's unique governance structure, however, is the most deeply rooted and longest lasting of the decentralization models and provides an appropriate model from which to glean insight into the role of districts in determining performance. The 32 community school districts that govern New York City's elementary and middle schools in effect operate as districts might in a single statewide public finance system.

New York City came to its decentralized governance structure in 1969 when the state legislature authorized a radical transformation of the city's centralized control. Thirty-two community school districts were created to govern the elementary and middle schools. Each district would have its own locally elected community school board and a superintendent in charge of instruction and operations. The central office retained control over high schools, systemwide budgetary functions, collective bargaining negotiations, pupil transportation, food services, school safety, fringe benefits, legal services, school maintenance and construction and renovation of schools. Under this decentralized governance structure, the central office allocates resources to community school districts through a series of formulae that take into account the number of students by grade and regulated or mandated class sizes. The locally elected district school board and superintendent are then responsible for developing the district's budget and allocating resources to schools. In 1996, new legislation shifted budgetary and administrative power away from the locally elected district school board and to the individual district superintendents and the system's chancellor of schools.[9] District superintendents are now solely responsible for the district budget and resource allocation decisions.

Perhaps the most prevailing impression of New York City's public school system is its sheer size: more than one million students, 1,100 schools and $13 billion in total spending. As is true for most large urban school systems, New York City's public schools enroll very high percentages of students who are racial or ethnic minorities and who are eligible for federal free lunch programs, limited English proficient (LEP) and/or recent immigrants to the United States. Just as there is diversity across districts within a state, there is diversity across New York City's districts. The diversity is not simply in terms of student demographics, but also in terms of the structural organization of the districts themselves, as reflected in the number of students, number of schools and the size of those schools. Furthermore, even though each district receives operating funds through the central formulas, total spending does vary across districts, as does the manner in which districts and schools spend their resources.

As seen in Table 1, there are nearly 700,000 students enrolled in 846 elementary and middle schools in the 32 community school districts. The average district enrolls 21,815 students and has 26 schools, 20 of which are elementary schools and 6 middle schools. Of the 645 elementary schools, 6% (37) enroll 0–300 students, 24% (156) enroll 301–600 students and 70% (452) enroll more than 600 students. Proportionally, there are far more middle schools in the smallest category, 20%, and far fewer in the middle category, 9%. What these averages and sums mask, however, is the difference across districts as hinted to by the minimum and maximum values reported in the same table.

Table 1. Characteristics of Community School Districts* in New York City, 1999

	Mean	*Min*	*Max*	*Sum*
Enrollment (October Register)	21,815	8,536	38,107	698,069
Number of Schools	26	14	48	846
Elementary Schools	20	11	38	645
Size: 0–300	1	0	9	37
Size: 301–600	5	0	12	156
Size: Over 600	14	3	24	452
Middle Schools	6	1	15	201
Size: 0–300	1	0	15	40
Size: 301–600	1	0	3	18
Size: Over 600	4	0	10	143
	Mean	*Min*	*Max*	*Standard Deviation*
% Free Lunch	76.7	22.8	94.8	16.8
% Asian	10.6	0.8	41.3	11.8
% Black	38.0	4.3	89.3	27.0
% Hispanic	37.9	7.0	89.7	23.6
% White	13.5	0.3	61.6	15.8
% Recent Immigrants	7.1	2.1	14.6	3.7
% Female	48.9	47.4	50.4	0.6
% Limited English Proficient	15.0	2.1	40.6	8.4
% Resource Room	6.4	3.6	9.9	1.5
% Special Education	6.1	3.2	10.3	1.9

Table 1. Characteristics of Community School Districts* in New York City, 1999 (Cont.)

	Mean	*Min*	*Max*	*Standard Deviation*
Spending Per Pupil	$8,769	$7,688	$11,190	693.5
Percent of Total Spending**				
Direct Services to Schools	88.5	87.4	89.4	0.5
Classroom Instruction	53.2	49.5	56.9	1.9
Teachers	45.1	40.7	49.2	2.2
Educational Paraprofessionals	3.0	1.3	4.8	0.8
Textbooks	0.7	0.5	0.9	0.1
Librarians & Library Books	0.1	0.0	0.4	0.1
Professional Development	1.7	0.6	4.5	0.8
Instructional Support	10.0	7.9	13.0	1.2
Leadership	7.3	6.3	8.5	0.5
District Costs	2.9	2.3	4.2	0.4

Notes: *There are 32 community school districts. **Percentages within categories will not sum to the category total as all breakdowns are not included.

Consider the two extreme cases in terms of district size: District 1, a geographically small district on Manhattan's lower east side that has seen its school-aged population decrease for decades; and District 31 that covers Staten Island, a populous borough known for its stable middle-class environment. District 1 enrolls 8,536 students compared to District 31's 38,107. Interestingly, fewer schools are not synonymous with lower enrollment, testifying to the organizational independence of the community school districts. While District 31 has more schools (48) than any other district, District 1 does not have the fewest; District 16, located in central Brooklyn, has only 14 schools, one of which is a middle school, and just under 10,000 students. District 4, located in the East Harlem neighborhood of upper Manhattan, is known across the country for its success in creating small learning communities. With just over 12,000 students it has 38 schools, only 10 fewer than the largest district in New York City.

The implication is that, while the size of schools depends in part on available space, districts in large measure do have control over school size. Those districts interested in creating smaller learning communities often are able to find suitable locations or break up existing large schools into smaller ones.[10] Clearly, districts are distinctly different from one another in the size of their schools. As seen in Table 1, there is at least one district without any small schools (minimum value equal to zero) and there are 12 districts without any small elementary or middle schools. Conversely, Districts 1 and 4 have nine such schools each. Large schools, on the other hand, are abundant and each district has at least one elementary school with more than 600 students enrolled. Districts may vary widely with respect to school size, for example two of the Queens districts are quite distinct; District 27, located in southeastern Queens, has 29 elementary schools of which 24 enroll more than 600 students; District 26, also in Queens, alternatively has neither small nor large schools as most of its elementary schools enroll between 301–600 students.

The middle panel in Table 1 reports statistics describing the characteristics of the average student in the average district and reports the standard deviation rather than the sum of the observations reported in the first panel. Nearly 77% of the elementary and middle school students in the average district are eligible for free lunch and approximately 11% are Asian, 38% are black, 38% are Hispanic and 14% are white. Educational needs are, on average, high, as 15% of the students are LEP, 6% receive resource room services (part-time special education services) and another 6% are in special education classroom settings on a full-time basis. Again, these district averages mask the diversity across districts and the different challenges each district faces addressing the educational needs of its students.

Demographically, the districts are quite distinct. Those that are geographically close to one another tend to be demographically similar, although not uniformly. District 26, as noted above, in northwestern Queens, is on many measures, truly distinct in comparison to any other New York City district, with a low of 22.8% of its students being eligible for federal free lunch programs. The district with the second lowest rate of eligibility, Staten Island's District 31, has nearly double the rate of eligibility with 40.2%. Districts 7 and 9 in the south and central Bronx, respectively, have more than 93% of their students eligible for free lunch.

While New York City is often considered the most diverse city in the United States, a close examination of the sub-city districts reveals differences in the racial and ethnic makeup of their students. In six of the seven districts in Queens, the percent of Asian students is greater than 17% and reaches a maximum of 41% in District 26. Upper Manhattan's District 6, which includes the densely populated Washington Heights neighborhood that is home Puerto Ricans and a large share of immigrants from the Dominican Republic, and most of the districts in the Bronx, except the northeastern most district, enroll high percentages of Hispanic students (greater than 60%); nearly 90% of District 6's students are Hispanic, for example. In the central Brooklyn districts more than 80% of the students are black. These districts encompass neighborhoods, such as Fort Greene (District 13), Bedford Stuyvesant (District 16), Crown Heights (District 17), East Flatbush (District 18), and Ocean Hill Brownsville (District 23), that are now well established African American and immigrant (primarily

Caribbean) neighborhoods of New York. Districts with relatively higher rates of Asian students, such as Districts 24, 25, and 26 in Queens, and districts with higher percentages of white students, such as Districts 20, 21, 22 in the southwestern portion of Brooklyn and District 31 in Staten Island, tend to have very low percentages of black and Hispanic students.

District 20 in southwestern Brooklyn and District 30 in Jackson Heights, Queens have the highest rate of students who are recent immigrants; approximately 14% of their students have been in American schools for three years or less. These two districts also have the lowest proportion of female students (around 47.5%). Central Brooklyn's districts 16, 18, 23 and 32, with high percentages of black students, also have the highest percentage of female students (approximately 50%). Do these figures suggest that immigration rates are higher for school-aged males, reflecting the fact that districts with high proportions of recent immigrants have the lowest proportion of female students? Answering this question is beyond the scope of this paper, but the question does raise an interesting point for further research.

In terms of educational needs, the districts with larger percentages of black students tend to have fewer LEP students. In turn, in the largely Hispanic district of Washington Heights in upper Manhattan, roughly 40% of its students are LEP. While the districts with the greatest percentage of recent immigrant students, Districts 20 and 30, have LEP rates above 20%, the representations of recent immigrant and LEP are not synonymous. The need for and use of resource room services and full-time special education classroom settings is also not consistent across districts. For example, Districts 1 and 31 have more than 9% of their students identified as needing resource room services, while District 17 in the Crown Heights neighborhood of Brooklyn identifies only 3.6% of its students in such need. In terms of full-time special education students, District 2 in Manhattan has the lowest percentage, with only 3.2% of its students in full-time special education programs. Conversely, District 7 in the south Bronx has 10.3% of its students in full-time special education. One of the difficulties in describing the differences across districts in the percentages of students receiving resource room and special education services is identifying factors to which to attribute the difference. Are there simply more students in need of such services in a district in the South Bronx compared to one in mid-Manhattan? Or, do the districts have different approaches to identifying and integrating students in need of special services? Is the location of appropriate facilities the driving force? Most likely it is a combination of these factors.

The third panel in Table 1 reports spending per pupil and the manner in which funds are spent. Spending ranges from a low of $7,688 per pupil to a high of $11,191 per pupil. More than 88.5% of the spending provides for the direct services of schools; an average of 2.9% of total spending covers central New York City district costs. The breakdown of spending by function may provide some insight as to how districts are investing resources. Clearly, not all districts spend their resources in the same manner. While the average district spends 3.0% on educational paraprofessionals, there is at least one district that spends 1.3% and one that spends 4.8%. A similar range is evident in professional development spending.

Rather than detail the high and low districts in each of the spending categories, we highlight two districts, District 4 in Manhattan and District 19 in Brooklyn. District 4, which spends $9,475 per pupil, spends near the minimum proportion on teachers (41.8%) and instructional support (11.8%) and the highest on leadership (8.5%). In contrast, District 19, which spends $9,035 per pupil, spends near the higher end on teachers (47.4%) and is the highest in terms of educational paraprofessionals (4.8%), but lowest in terms of instructional support (8.5%). Demographically, the two districts both have high rates of free lunch eligibility, as well as similar percentages of minority, LEP and recent immigrant students. Clearly they have made different choices in how to use resources.

SCHOOLS IN DISTRICTS

Descriptive Statistics

While the discussion above focused on describing students in the 32 community school districts, this section focuses on schools (see Table 2). The distinction between average student (Table 1) and average school (Table 2) is straightforward. In the former, an average for each district is calculated from school-level data that is weighted by the number of students in each school, reflecting the characteristics of and spending on the average student in the district. In the latter, an average for each district is calculated from school-level data that is *not* weighted by the number of students in each school, reflecting the perspective of the average school. In both cases, we then calculate an average for all districts. The average school in the average district has 43.8% of its test takers passing the reading exam and 46.6% passing mathematics. More than 800 students are enrolled in the average school and the daily attendance rate is 90%, with 92% of the students in the same school in June as in the previous October. As seen by the range in the minimum and maximum values, the average school differs noticeably across districts.

Table 2. Characteristics of Schools in Community School Districts* in New York City, 1999

	Mean	*Min*	*Max*	*Standard Deviation*
Test Scores				
Reading:				
Mean Z of NCE	–0.029	–0.491	0.835	0.327
% Pass	43.8	25.1	81.4	13.6
Mathematics:				
Mean Z of NCE	–0.026	-0.509	0.964	0.364
% Pass	46.6	27.0	85.8	15.2
School Characteristics				
Enrollment (October Register)	831	324	1371	223.4
% Average Daily Attendance	90.4	87.2	94.6	1.9
% of Students in This School in Ocotber & June	92.1	88.2	94.8	1.4
School Inputs				
Spending Per Pupil (All Students)	$9,013	$7,877	$11,305	698.7
Spending Per Pupil (Excluding Full-time Special Education)	$8,061	$7,094	$10,067	573.0
Spending Per Pupil (Full-time Special Education Students)	$23,911	$19,822	$29,777	2528.9
Teachers per 100 students	6.8	5.6	7.8	0.6
% of Teachers, Fully Licensed	81.8	64.8	98.1	9.0
% of Teachers, Experienced (5+ years)	61.4	52.3	76.3	5.6
% of Teachers, In This School 2+ years	62.8	49.9	72.2	5.5
Non-teacher Spending Per Pupil	$5,036	$4,354	$6,646	533.3
Coefficient of Variation				
Test Scores				
Reading:				
Mean Z of NCE	2.622	–5.409	57.287	11.108
% Pass	0.316	0.076	0.510	0.107
Mathematics:				
Mean Z of NCE	–0.740	–9.759	6.047	2.954
% Pass	0.338	0.084	0.551	0.102
School Characteristics				
Enrollment (October Register)	0.391	0.220	0.660	0.112
% Average Daily Attendance	0.022	0.008	0.037	0.006
% of Students in This School in Ocotber & June	0.038	0.016	0.091	0.015

Table 2. Characteristics of Schools in Community School Districts* in New York City, 1999 (Cont.)

	Mean	*Min*	*Max*	*Standard Deviation*
School Inputs				
Spending Per Pupil (All Students)	0.191	0.091	0.448	0.066
Spending Per Pupil (Excluding Full-time Special Education)	0.150	0.067	0.487	0.082
Spending Per Pupil (Full-time Special Education Students)	0.279	0.158	0.875	0.130
Teachers per 100 students	0.175	0.100	0.603	0.091
% of Teachers, Fully Licensed	0.106	0.029	0.195	0.037
% of Teachers, Experienced (5+ years)	0.180	0.106	0.306	0.051
% of Teachers, In This School 2+ years	0.177	0.102	0.282	0.047
Non-teacher Spending Per Pupil	0.240	0.111	0.413	0.062

Note: *There are 32 community school districts.

The districts with the highest performing schools in reading, District 2 in Manhattan and Districts 25 and 26 in Queens, are also the highest in mathematics. This holds true as well at the opposite end of the spectrum, with schools in District 5 in Central Harlem and Districts 9 and 12 in Central Bronx having the lowest passing rates in reading and mathematics. District 26's schools stand out as high performing in terms of passing rates, attendance rates, and percent of students who are in the same school in October and June. Districts 23 and 32's schools, both in Central Brooklyn, have the lowest average daily attendance rate and percent of students who are in the same school in October and June, respectively. Per pupil spending for the average school, including spending on students in special education on a full-time basis, is $9,013 and, excluding such students, is $8,061. In terms of special education, per pupil spending is nearly 3 times that of the general education average and the range from lowest to highest special education spending is nearly $10,000. Giving a proper context to spending on full-time special education students is difficult because of the widely different needs of such students. Interestingly, the highest per pupil spending on full-time special education students is in District 26's schools, where the rate of special education is quite low. Conversely, the lowest spending is in District 23's schools where the special education rate is quite high. Does this association reflect economies of scale or some other phenomenon? The answer to this question is beyond the scope of this paper, but important nevertheless.

Teachers, both in their number and the characteristics that are often touted as proxies for quality, exhibit similarly wide variations across districts. The average school in the average district has 6.8 teachers per 100 students, of which 81.8% are licensed, 61.4% have five or more years of experience and 62.8% have taught in the same school for two or more years. An average of $5,036 is spent on students, excluding expenditures on teachers. Schools in districts with lower percentages of free lunch eligible, LEP, black and Hispanic students, such as Districts 25 and 26 in Queens and District 31 in Staten Island, have the highest percentages of licensed, experienced and stable teachers. Conversely, those districts that on average have schools with higher proportions of these types of students have the lowest percentages of experienced, licensed and stable teachers. For example, 64.8% of the teachers in the central Bronx District 12's schools are licensed, 53.6% are experienced and 53.4% are stable. These rates are at least 25 percentage points below those for District 25's schools.

The distribution of school test scores and resources within districts is an issue that researchers often address from an equity perspective. The coefficient of variation is a measure of dispersion that is often used to assess whether or not the distribution of objects is equitable.[11] Standards established by previous research suggest that a coefficient of variation greater than 0.10 indicates high disparity (Odden & Picus, 2000). How disparate is the distribution of resources within districts? Is there variation in the within-district distributions across districts? Table 2 reports the average coefficient of variation for New York City's districts.[12]

The coefficients on the percent of students passing reading and mathematics are high relative to the 0.10 standard, with the coefficient on mathematics slightly higher than the one on reading. Enrollment also varies within districts, with an average coefficient of 0.391. Attendance rates and the percentage of students in the same school in October and June are the most evenly distributed factors across schools within districts and across districts.

Per pupil spending is, on average, somewhat disparate, with coefficients of variation exceeding 0.10 in each case. Teachers, with the exception of those who are licensed, also have high dispersion as seen in the average coefficients of variation. In terms of spending and teachers, however, not all districts are alike. Some have much higher coefficients of variation than others. For example, the coefficient of variation on spending per pupil (All Students) is 0.448 in District 4 and 0.090 in District 29. The only observable pattern is that 4 of the 5 districts with the greatest variation in per pupil spending are in Manhattan (Districts 1, 2, 3, and 4). Notably, Districts 6 and 12 have the highest coefficients of variation on the distribution of licensed teachers, as well being among the districts with the lowest percentages of such teachers. Conversely, Districts 26 and 31 have the most even distribution of licensed teachers, as well as the greatest percentage of such teachers.

School-level Regressions

Table 3 shows the results of two regressions, one with average school reading Z scores as the dependent variable and the other with average school mathematics Z scores as the dependent variable. The regressions include district effects.[13] Because the models include district effects, the R^2 explains more than 90% of the variation in reading and mathematics test scores.[14] In both the reading and mathematics regressions the district effects are jointly significant at the 1% level. Thus, districts do matter.

Table 3. Parameter estimates, Reading & Mathematics. School-Level Production Functions with District Fixed Effects (Robust Standard Errors)

	Reading	*Math*
Intercept	**–1.263**	**–1.383**
	(0.239)	(0.238)
Lag of Reading/Math	**0.763**	**0.758**
	(0.015)	(0.014)
% Free Lunch	**–0.001**	**–0.001**
	(0.000)	(0.000)
% Asian	0.000	0.000
	(0.000)	(0.000)
% Black	**–0.001**	**–0.002**
	(0.000)	(0.000)
% Hispanic	**–0.001**	**–0.001**
	(0.000)	(0.000)
% Recent Immigrants	0.000	0.000
	(0.001)	(0.001)
% Female	**0.003**	**0.002**
	(0.001)	(0.001)
% Limited English Proficient	–0.001	**–0.001**
	(0.000)	(0.000)
% Resource Room	**–0.007**	**–0.008**
	(0.001)	(0.001)
% Special Education	0.000	0.000
	(0.001)	(0.001)
Log Teachers per 100 students	–0.022	**–0.029**
	(0.017)	(0.014)
% of Teachers, Fully Licensed	0.001	**0.001**
	(0.000)	(0.000)
% of Teachers, Experienced (5+ years)	0.000	0.000
	(0.000)	(0.000)

Table 3. Parameter estimates, Reading & Mathematics. School-Level Production Functions with District Fixed Effects (Robust Standard Errors) (Cont.)

	Reading	*Math*
% of Teachers, In this school 2+ years	0.000	0.000
	(0.000)	(0.000)
Log Non-teacher Spending Per pupil	0.004	0.007
	(0.021)	(0.021)
Log Enrollment (October Register)	**–0.021**	**–0.026**
	(0.008)	(0.008)
% Average Daily Attendance	**0.014**	**0.016**
	(0.002)	(0.002)
% of Students in this school in Ocotber & June	**0.002**	**0.002**
	(0.001)	(0.001)
Elementary Schools	**–0.014**	**–0.028**
	(0.008)	(0.008)
1998	0.001	**–0.021**
	(0.007)	(0.007)
1999	0.004	**–0.017**
	(0.009)	(0.008)
R-Squared	0.9313	0.9441
N	2538	2538
F statistic	513.12	635.29

Notes: F-test for joint significance of district effects significant at 1% level.
Bold indicates significance at the 10% level or better.
Regressions include dummies for missing for %LEP, %Resource Room, %Special Education, % of Teachers Licensed, Experienced, In This School for 2 Plus Years, and % of Students in this school (October & June).

In general, the estimates from reading and mathematics regressions are quite similar. The coefficients on the previous year's scores are positive and statistically significant, meaning that schools with higher test scores in the previous year do better. As is often the case in such estimates, schools with higher percentages of students eligible for free lunch have lower test scores. The same is true for those schools with higher percentages of black or Hispanic students. In contrast schools with more female students have higher test scores. Counter to expectations, the coefficient on LEP is insignificant in the reading regressions, but is significant and negative in the mathematics regressions. While the coefficients on teacher resources are insignificantly different from zero in the reading regressions, schools with more teachers per 100 students have lower mathematics scores, but those with a greater percentage of teachers who are fully licensed have higher scores. Whether this reflects a tradeoff being made between class size and experience is a worthy topic for future research that is outside the scope of this study. As seen by the coefficient on the log of enrollment, larger schools have lower reading and mathematics test scores. Schools with higher attendance rates and more students who are in the school in October and June do better as well. Test scores, in general, tend to be lower in elementary schools compared to middle schools. Over the three years, reading test scores have increased, though not significantly. Mathematics scores are lower in both 1998 and 1999 than in 1997.

District Effects

Our results show that districts do matter; the fixed effects are jointly significant. The district effects from the reading and mathematics regressions described above are summarized in Table 4. The mean of the district effects in both reading and mathematics is close to zero, but there is quite a bit of variation. Are districts that are effective in producing higher test scores in reading the same as those that produce higher test scores in mathematics? The correlation between district effects in reading and mathematics is quite strong. The Pearson correlation is 0.82 as shown in Table 4. Their ordinal rank, from highest performer to lowest performer, is highly correlated as well. The Spearman rank correlation is 0.83. As shown in Figure 1, where the districts are arrayed in order of the effect size (low to high), the five districts at the bottom of the range have distinguishably lower fixed effects than the next group of districts, but they are much closer to one another than the two highest performing districts that far exceed the next highest performing district. If instead we arrange districts by their respective borough as done in Figure 2, we see that even within boroughs there is variation in the district effects.

Table 4. Descriptive Statistics and Correlations, Fixed Effects

	N	*Mean*	*Min*	*Max*	*Standard Deviation*
Reading	32	0.0000	–0.0434	0.0949	0.0299
Mathematics	32	0.0012	–0.0472	0.0674	0.0280
Pearson Correlation	32	0.8192			
Spearman Correlation	32	0.8325			

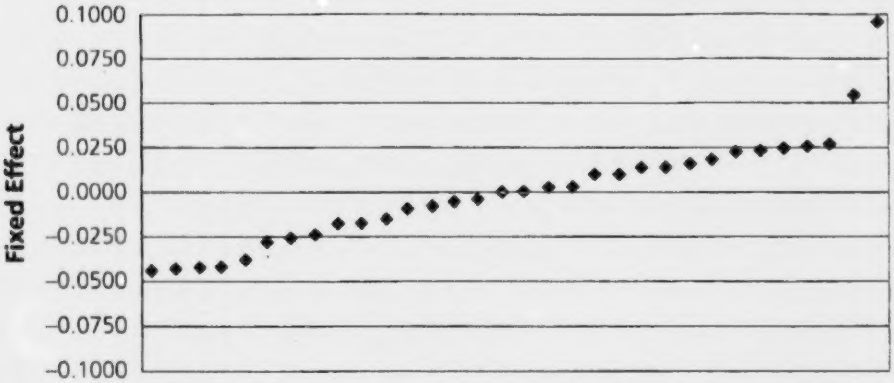

Figure 1. Reading, District Effects in Ascending Order.

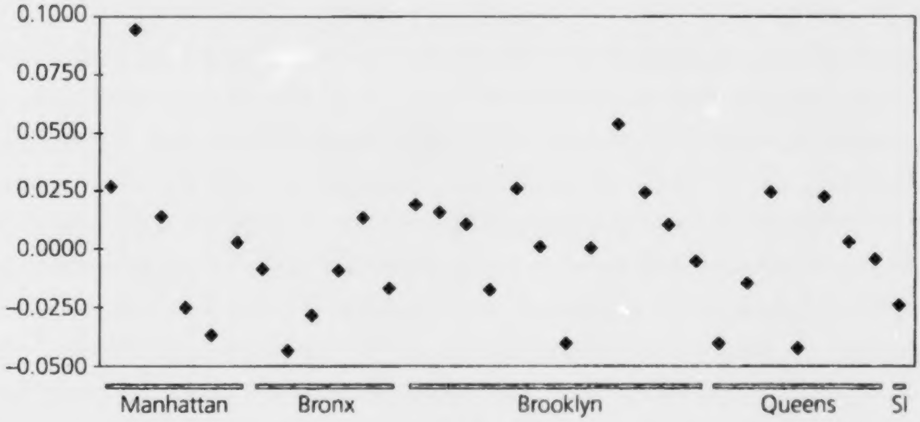

Figure 2. Reading, District Effects by Borough.

While there are many characteristics of districts that are difficult to measure, such as district leadership style, some variables we can measure, such as the size of districts, number of schools, total resource level and functional purpose of resources. Including these variables in the regressions, rather than district dummies, may provide insight into how (or why) districts matter. Table 5 reports the coefficients on the district-level variables in the school-level regressions that also included school-level variables. Although not shown, in large measure, the signs and significance of the school-level coefficients do not change. The one notable exception is the coefficient on the percent of Asian students. In the previous regression that coefficient is positive and insignificant, but here it becomes negative and significant. The coefficients on the district-level variables indicate that some are related to performance of schools. Schools in districts that have a higher average test score in the previous year do better. The more middle

Table 5. Selected Parameter Estimates, Reading & Mathematics. School-Level Production Functions with District-Level Variables (Robust Standard Error)

	Reading	*Math*
Intercept	1.191	–1.986
	(1.775)	(1.921)
District Enrollment	0.000	0.000
	(0.000)	(0.000)
District Enrollment Squared	**0.000**	**0.000**
	(0.000)	(0.000)
District Average Z Score	**0.123**	**0.088**
	(0.030)	(0.029)
Number of Elementary Schools	0.001	0.000
	(0.002)	(0.002)
Number of Middle Schools	**–0.002**	–0.001
	(0.002)	(0.002)
Total Spending Per Pupil	**0.000**	0.000
	(0.000)	(0.000)
% of Total Spending, Direct Services	–0.030	0.004
	(0.021)	(0.023)
% of Total Spending, Classroom Instruction	0.003	–0.007
	(0.006)	(0.007)
% of Total Spending, Teachers	–0.004	0.008
	(0.007)	(0.008)
% of Total Spending, Educational Paraprofessionals	0.006	**0.016**
	(0.008)	(0.010)
% of Total Spending, Textbooks	**–0.042**	0.015
	(0.017)	(0.017)
% of Total Spending, Librarians & Library Books	0.020	–0.004
	(0.030)	(0.031)
% of Total Spending, Professional Development	0.004	**0.018**
	(0.009)	(0.011)
% of Total Spending, Instructional Support	–0.010	–0.001
	(0.006)	(0.005)
% of Total Spending, Leadership	0.001	**0.014**
	(0.007)	(0.008)
% of Total Spending, District Costs	–0.017	0.014
	(0.027)	(0.031)
R-Squared	0.9306	0.9436
N	2538	2538
F statistic	**3006.88**	**878.72**

Notes: Bold indicates significance at the 10% level or better.

The regression includes the school-level variables from the regression reported in Table 3. Only the coefficients on the district-level variables are reported in this table.

Regressions include dummies for missing for %LEP, %Resource Room, %Special Education, % of Teachers Licensed, Experienced, In This School for 2 Plus Years, and % of Students in this school (October & June).

The difference between significant and insignificant coefficients equal to 0.000 and their standard errors also equal to 0.000 are only seen when the figures are reported to the millionths.

schools a district has, the lower the reading and mathematics scores, significantly for reading and not so for math. Spending matters to reading scores, but not to math scores. The greater proportion of total spending dedicated to educational paraprofessionals, the higher the math scores. Spending on professional development and leadership also matter in terms of math scores. Textbook spending is the only spending that is significantly related to reading scores and it is negatively related.

Some of these findings may be counterintuitive; the greater percentage spent on textbooks, the lower the test scores, for example. But on average a district spends less than 1% of its resources on textbooks. Perhaps the choice in textbooks matters more than the resources spent on textbooks. It is interesting that schools in districts that spend more on educational paraprofessionals have higher math scores. Perhaps educational paraprofessionals are more effective in assisting in mathematics instruction than in reading instruction. There are, as always, multiple potential explanations for these observed relationships. Disentangling them is beyond the scope of this paper but certainly worthy of further study in the future. Striking an effective balance between resource investment and student achievement is one of basic challenges districts face.

CONCLUSIONS

Although New York City's community school districts are not responsible for taxation, still their diversity and distinct identities offer an opportunity to examine whether or not districts affect school performance. Our results indicate that districts do indeed matter. Our estimated district fixed effects suggest an important role for the districts. Whether that effect is due to unobservable, time invariant district characteristics or differences in the measurable characteristics of the districts is examined and our results indicate that it is the number of middle schools, the level of per pupil spending and the ways that resources are spent that matter. Districts do have a role, though often difficult to measure, in the production of education at the school level.

Accountability systems, whether at the state or federal level, may fail to capture the importance of districts in the production of school performance, if districts are not explicitly included in performance estimates. Excluding districts from statewide accountability systems does call into question the role of districts, not only in accountability systems but also in finance systems that lean toward increasing state sources as a share of revenues. Given the wide variation across districts in New York City in terms of their resource use and distribution across the district's schools, districts will have an important role even in a public finance system that draws a much greater share of its revenues from state sources. The evidence from New York City's public elementary and middle schools is that districts do matter and they should be part of performance accountability systems. If districts play an important role in determining the academic performance of their member schools, then implementing accountability systems that focus sanctions and rewards on its schools will be less effective than a system that holds both accountable. In New York City the chancellor of the public schools system holds the community school district superintendents accountable for the performance of their schools and students. The chancellor produces *District Performance Profiles* that are used in the evaluation process and in dialogues on district and school improvement (Board of Education of the City of New York, 2002). This is but one component of an accountability system in New York City that does focus on both schools and districts.

ACKNOWLEDGMENT

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NOTES

1. Much of the material on production functions is drawn from other publications by Schwartz and Stiefel, notably, "Measuring School Efficiency: Lessons from Economics, Implications for Practice," 2000 in *Improving Educational Productivity*, editors, David H. Monk, Herbert J. Walberg, and Margaret Wong, Greenwich, CT, Information Age Publishing Inc.
2. In fact, there are many levels of nesting: kids in classrooms in schools in districts in states. The policies and practices at all of these levels arguably affect student performance, but given the availability of data and the sophistication of statistical techniques, it would be prohibitive to conduct an analysis that considers all of these levels. For now we think it is crucial to bring the district into the picture.
3. Note that not all the residual variation is attributed to district effectiveness, rather the error term picks up the random variation.
4. The estimation procedure must, then, account for the difference in the "level" at which the district and school variables are measured. As described below, we use robust standard errors to control for clustering of observations within districts. See Raudenbusch and Bryk (1986) for more on this.

5. $Z = \dfrac{X_{it} - \overline{X}_t}{\sqrt{S^2_t}}$
6. We weight each grade's Z score by the respective number of students tested in each grade. This helps to account for possible differences in the number of students tested by grades.
7. High schools are not part of the community school districts, but are run centrally from the New York City Board of Education.
8. Chicago's public schools are divided into six geographic regions. A regional director oversees a staff that serves as a liaison to the central offices, provides support to local schools, coordinates desegregation efforts and enforces rules and contracts. In June of 2000, the Los Angeles Unified School District reorganized the district into 11 local school districts, with more than 50,000 students in each district in kindergarten through 12th grades. Unlike the Chicago regional directors, Los Angeles's superintendents do have budgetary and instructional authority.
9. Locally elected school boards had the authority to hire a superintendent and principals for the district's schools. The new legislation stripped them of this power.
10. The chancellor previous to the current one issued regulations concerning the size of schools and the financial support and designation of smaller learning communities as schools.
11. The coefficient of variation is calculated by dividing the square root of the variance (standard deviation) by the mean value.
12. The coefficient of variation on the mean Z scores in reading and mathematics are numerically excessive because of the values of the Z scores. It is difficult to interpret these numbers, thus, only the coefficients on the percent passing measure are discussed.
13. The regressions include dummies for missing values for % LEP, % Resource Room, % Special Education, % of Teachers Licensed, Experienced, In This School for 2 Plus Years, and % of Students in this School (October & June). The coefficients on these variables are not reported in Table 3.
14. The regressions reported in Table 3 are not weighted by student counts. Weighted regressions were run and produced similar results and, thus, are not reported here.

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Part II

THE SUPPLY, DEMAND, AND QUALITY OF CITY TEACHERS

CHAPTER 6

TEACHER ATTRITION AND MOBILITY IN URBAN DISTRICTS

Evidence from Wisconsin

Jennifer Imazeki

INTRODUCTION

In the last few years, there has been increasing concern about the shortage of high-quality teachers around the country. However, there are many who argue that the idea of a general teacher shortage is misleading, that the real problem is not one of quantity but of distribution. Emily Feistritzer and others point out that there are plenty of people available and qualified to teach but, for various reasons, these would-be teachers are not getting into the schools that need them (Feistritzer, 1998). The focus of policymakers therefore should not be on generating more teachers generally but on attracting teachers to the fields and districts that are in highest need.

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The districts that do face true shortages tend to be urban and rural districts. In a recent survey of 40 of the largest urban schools, almost all expressed an immediate need for math, science, special education and bilingual teachers (Recruiting New Teachers, 2000). And even when similar percentages of urban and suburban schools report vacancies in math and science, central city schools are far more likely to state that it is "very difficult or impossible" to fill vacancies (National Center for Education Statistics, 1997). These shortages can have serious consequences for the quality of education for students in these districts, since when urban districts have vacancies, they are more likely to use substitute teachers, to hire a teacher that principals identify as "less than qualified," or to simply increase class size (NCES, 1997).

The reasons for shortages in urban districts are not a particular mystery and yet policymakers seem to have made little headway in combating the problem. This chapter will discuss the unique problems facing urban districts that lead to difficulties in hiring and retaining teachers, with a particular focus on the role of teacher attrition and mobility. Much of the attention on teacher shortages has focused on the difficulties attracting new teachers into the profession and retaining them once they are there. However, teachers are just as likely to leave one teaching position for another as they are to leave for a job outside the teaching profession, and this within-profession mobility is a particular problem for urban districts. Because of this, common solutions to the teacher shortage problem for the education system as a whole may not be sufficient, or even appropriate, for urban districts.

The next section discusses why urban districts are more likely than other districts to experience teacher shortages. I then explore the more specific issue of teacher attrition. Using data from Wisconsin, I estimate district attrition rates for beginning teachers. Of particular interest is the impact of wage differentials—how *much* more is required to retain teachers in urban districts? The results have important implications for school finance at the state level as aid programs that seek to equalize spending across districts may be contributing to the teacher shortages in urban districts.

SUPPLY AND DEMAND IN URBAN DISTRICTS

According to Feistritzer (1999), the number of new teacher graduates (i.e., college grads qualified to teach) increased by 49% between 1983 and 1998. However, fewer than half of these graduates went into the classroom. In addition, there are thousands more in the general population who are qualified to teach—in 1993, more than 20% of new *hires* in teaching were not new teachers but people who had taught sometime in the past and were returning to teaching (NCES, 1997). With all these potential teachers out there, why do we see headlines every year lamenting the shortage of teachers?

The reality is that there *are* shortages but they are suffered disproportionately in certain subject specialties and by urban and rural districts. A shortage, by definition, is a situation in which the quantity demanded exceeds the quantity supplied. Urban districts suffer from the double misfortune of low supply and high demand, relative to other districts. In this section, I will discuss the many factors that contribute to teacher shortages in urban districts; in the next section, I focus on one specific cause of high demand in urban districts, teacher attrition.

LOW SUPPLY

In simplest terms, urban districts suffer from shortages because at a given wage, fewer teachers want to work in urban districts. It is not hard to understand why. All of the issues that teachers as a whole perceive as problems and hardships of teaching are bigger problems and hardships in urban schools. When asked about a host of problems, urban teachers were more likely than their suburban and rural counterparts to see problems as serious, including student absenteeism, verbal abuse of teachers, lack of parental involvement, student apathy, poverty, and student disrespect for teachers (NCES, 1997). In addition to these problems, urban teachers must also contend with physical limitations such as classrooms without heat or air conditioning, and a lack of books, supplies and computers, not to mention threats to their physical safety: 32% of urban teachers report that a student has threatened him or her, and 14.2% report actually being attacked.[1]

Finally, the job of an urban teacher is often more challenging simply because the students have different needs. While similar percentages of urban and suburban teachers report having limited-English proficient (LEP) students in their classes, urban teachers are more likely to have *more* LEP students—suburban classrooms are most likely to have fewer than 10% of the class as LEP while urban classrooms are more likely to have more than 50%. Twenty percent of urban teachers also report that student misbehavior interfered with their teaching and 37% feel that students being unprepared to learn is a serious problem.

With challenges such as these, it is little wonder that fewer people are interested in teaching in these districts. Because of these problems, economic theory suggests that urban districts need to offer higher salaries in order to attract the same quantity and quality of teachers as more attractive districts (Rosen, 1986). In general, if there are disamenities associated with a particular job, employers will need to offer a higher wage to attract workers; if there are positive amenities associated with a particular job, the wage will be bid down by the surplus of available workers. That is, market forces should lead to compensating wage differentials that reflect the amenities and disamenities associated with any particular job. However, in urban districts, salaries are often just as likely to be lower than neighboring suburban districts as higher. And even when they are higher, it is not clear that they are high enough to truly compensate teachers for the harsher working conditions; 63.4% of urban teachers report being unsatisfied with their salary, as opposed to 48.7% of suburban teachers. Added to this, urban teachers are also slightly less likely than their suburban counterparts to receive non-salary benefits; for example, 69.7% of urban teachers receive dental insurance, versus 76.6% of suburban teachers, and only 17% of urban teachers receive in-kind benefits (e.g., tuition reimbursement, childcare expense, etc.), compared to 26.4% of suburban teachers.

HIGH DEMAND

While the supply of teachers to urban districts is lower than in other districts, the demand for urban teachers is higher. In part, this is simply a function of size—in virtually every state, the largest districts are urban and one in six students in this country attend a large city school. For example, districts with enrollments larger than 25,000 make up only 1.6% of all districts but educate 31.5% of all students (NCES, 1999). With so many students, urban districts simply have more teacher positions to fill and these districts employ roughly one-third of the teacher labor force.

It is important to point out that because urban districts have more teacher positions overall, they need to hire more new teachers even when their hiring *rate* is the same as other districts. For example, if 5% of the teaching force in a district is newly hired, that may represent five new teachers in a district with one hundred teachers, or it could mean fifty teachers in a district with 1000 teachers.

The demand for teachers is also affected by policies to reduce class sizes. Although these policies are intended to improve the quality of education for students, they can create a large immediate increase in the demand for teachers that may compromise a district's ability to take full advantage of the smaller classes. Because of the size of urban districts, and given that these districts often start out with the largest class sizes, class-size reduction policies can generate a larger increase in teacher demand for urban districts. California's experience with class-size reduction suggests that while virtually all districts initially had concerns about filling new positions, urban districts hired a disproportionate share of inexperienced teachers with emergency credentials, and it is these districts that continue to have problems with teacher shortages (Stecher & Bohrnstedt, 2000).

Even in the absence of new positions that might be created by growing enrollments or class-size reduction, districts must replace those teachers that they lose, either through retirements, attrition to other jobs, or people who leave for various personal reasons. The fact that the cohort of baby-boom teachers is fast approaching retirement is a large concern for all districts though again, urban districts lose larger *numbers* of teachers even when the percentage of retirees is the same as other districts. In addition, while all districts are concerned with losing teachers to other professions, urban districts are more likely to face the additional challenge of losing teachers to other districts. This within-profession mobility not only increases demand for teachers in urban districts, who must replace outgoing teachers, but may also have implications for the distribution of teacher quality across districts. The next section explores this issue of teacher attrition in more detail.

TEACHER ATTRITION

According to the National Center for Education Statistics, the attrition rate out of teaching in 1993–94 was just under 7%. A slightly higher percentage moved between schools (NCES, 1998). The transfer attrition rate is even higher among new teachers. Many teachers begin their careers in urban districts (since these large districts are the most likely to be hiring), but then decide to leave teaching, or to move to more attractive suburban districts after gaining a few years of experience. In suburban and rural districts, over one-third of newly-hired teachers are experienced teachers, transferring from another teaching position, while only 15% of urban new hires are transfers (NCES, 1997). The catch-22 for urban districts is that when they have openings to fill, the teachers they hire are more likely to be new, inexperienced teachers, who are the most likely to leave within only a few years, only to be replaced by more new, inexperienced teachers who are again more likely to leave.

What can policymakers do to help stop the revolving door in urban districts? Unfortunately, we know relatively little about teacher transfer attrition. We know more about teacher attrition out of teaching or out of districts. There are several studies of the decision to stop being a teacher (see, e.g., Baugh & Stone, 1982; Dolton & van der Klaauw, 1999; Murnane & Olsen, 1990). These studies focus on the salary differential between teaching and other professions or on teacher and district characteristics. The consensus from these analyses is that increasing teacher salaries relative to other professions is important for retaining teachers. Also, teachers who begin teaching later in life tend to stay in teaching longer, while teachers of math and science tend to have shorter teaching spells.

However, since these studies view attrition from the perspective of the profession, all teachers who remain in teaching (regardless of whether they remain in the same *job*) are compared to all teachers who leave teaching. This can give state or federal policymakers some important insights for retaining teachers overall but may be of limited help to districts who lose many of their teachers to other districts. Only a small number of studies have examined attrition from the perspective of the district (see Mont & Rees, 1996; Theobald, 1990). Similar to attrition out of the profession, these studies find that increasing teacher salaries can help with teacher retention.

But while these studies provide important information about which districts are most likely to lose teachers in general, these analyses compare all teachers who stay in a district with all teachers who leave a district. That is, teachers who leave teaching entirely are lumped together with teachers who stay in the profession but simply change jobs. Yet surveys of departing teachers suggest that there are important differences between these two groups; for example, teachers who leave the profession are more likely to be leaving for personal or family reasons (NCES, 1997). If teachers who transfer and teachers who exit teaching have different preferences, they may respond differently to policies designed to entice them to stay.

Theobald and Gritz (1996) is the only recent study to discuss transfer and exit attrition separately, and they find some important differences in how transfers and exits respond to salary changes and district spending decisions. In particular, raising salaries in all districts is found to reduce the probability that a teacher will leave a district but given that she leaves, it increases the probability that she transfers to a different district (rather than exiting teaching altogether). However, when a district's salaries increase relative to other districts, the probability of transfer falls and the probability of exit increases. These differences imply that policies that increase teacher salaries need to be constructed carefully if the intention is to attract and retain teachers in high-need, urban districts.

TEACHER MOBILITY IN WISCONSIN

To further explore the impact of teacher salaries on teacher mobility and attrition, I use a slightly different econometric approach than Theobald and Gritz (1996) and focus on beginning teachers in the state of Wisconsin. Wisconsin's experience with teacher shortages during the late 1990's has been fairly representative of other states: shortages have been most acute in special education and in math and science subjects, while Milwaukee, which is the largest urban district, has been more prone than other districts to shortages in all subjects and specialties (Lauritzen, 1998). Using annual data on beginning teachers in Wisconsin, I estimate a competing-risks duration model in which the decision to transfer is separated from the decision to exit teaching.[2] The competing-risks duration model estimates the hazard function for teachers: the conditional probability that a teacher leaves her original district, given that she has not left prior to the year under investigation. Thus the model not only estimates whether a teacher is likely to leave but when she is most likely to do so. The results can then be converted to survivor functions which indicate the accumulated probability that a teacher will "survive" for a particular length of time. The competing-risk specification allows the decision to transfer to another district to be treated as a separate transition from an exit out of the teaching profession.

The data, described in Table 1, are provided primarily by the Wisconsin Department of Public Instruction and include anyone who became a teacher in a public school in Wisconsin between 1992–93 and 1998–99. The administrative data on teachers are rich in information about a teacher's basic characteristics and qualifications (race, age, education, experience) and job assignment (grade, subject, FTE). Added to this are data on student and districts characteristics, such as racial composition, total enrollment and the percent of poor students (proxied by the percent eligible for the federal free and reduced price lunch program). Missing from the data are marital status or family characteristics of the teachers. Because there are likely to be gender differences in the response to these unobserved variables (e.g., women are more likely to leave in order to take care of children), the estimation is done separately for men and women.

Three measures of teacher wages are included in the analysis. A teacher's own salary is the most common measure. In addition, since district salary schedules clearly lay out salaries for all education and experience levels, a teacher has a great deal of information about what her future wages will look like. It is likely that she takes this information into account when deciding whether to stay or leave. Therefore, I include the maximum salary offered in the teacher's district as an indicator for a teacher's *expected* wages if she stays in the district. Also, included is a measure of a teacher's *relative* wage within the teaching profession. While educators have complained for years about the differential between teacher salaries and wages in other professions, teachers who stay in teaching are likely to be more interested in what they could be making in other districts, not other professions. Therefore, I construct a relative wage variable that is the ratio of a teacher's own salary and the average salary earned by teachers with the same level of education and experience in nearby districts.[3] Finally, a cost of living index (from the National Center for Education Statistics) and

Table 1. Summary Statistics New Wisconsin Teachers, 1992–93 through 1998–99 (Source: Wisconsin Department of Public Instruction)

		Women		*Men*	
		Mean Total spells = 6967	*STD*	*Mean Total spells = 2773*	*STD*
Wages:					
Teacher Salary		$23,968.91	4894	$24,944.27	4302
Maximum Salary in district	$1992	$47,863.86	6988	$47,076.60	6953
Relative Wage	% of average salary in region	0.99	0.10	0.99	0.10
Teacher Characteristics:					
Race	1 = non-white	0.05	0.21	0.05	0.21
Advance Degree	1 = Advanced degreee beyond Bachelor's	0.06	0.24	0.07	0.25
Starting Age	1 = Entered teaching after age 30	0.26	0.44	0.25	0.43
Math	1 = teaches math or science course	0.09	0.29	0.24	0.43
Special Education	1 = teaches special education	0.20	0.40	0.11	0.31
Elementary	1 = teaches grade preK–6	0.51	0.50	0.20	0.40
High School	1 = teaches grade 9–12	0.18	0.39	0.40	0.49
Part Time	1 = teaches less than 100% time	0.11	0.32	0.08	0.27
Additional Duties	1 = performs non-teaching duties for pay	0.14	0.35	0.37	0.48
Student Characteristics:					
Poor	% students eligible for Free and Reduced Price Lunch program	27.7%	22	26.4%	20
Nonwhite	% students non-white	17.8%	25	15.0%	23
Enrollment		17827.97	33313	14535.93	30262
District Characteristics:					
Milwaukee		0.16	0.37	0.13	0.34
Rural		0.26	0.44	0.31	0.46
Cost of Living Index		100	4.18	100	4.03
Unemployment Rating		4%	1	4.1%	1

Table 1. Summary Statistics New Wisconsin Teachers, 1992–93 through 1998–99 (Source: Wisconsin Department of Public Instruction) (Cont.)

		Women		*Men*	
		Mean Total spells = 6967	*STD*	*Mean Total spells = 2773*	*STD*
Average county earnings	$1992	$21,980.48	3295	$21,980.48	3295
Total Spending per Pupil	$1992	$5,629.50	709	$5,600.70	694
Instructional Spending/Total Spending	$1992	0.63	0.025	0.63	0.026

average earnings in the county are also included to control for regional salary differences.

The estimation results are presented in Table 2. The coefficients here are the hazard *ratios*—they represent the relative impact of a one-unit change in the variable on the probability of transfer or exit. For example, the coefficient of 1.99 on race in the exit hazard for women implies that a nonwhite female teacher is 1.99 times more likely to exit than a white female teacher. In general, a coefficient greater than one implies an increased probability of transfer or exit, while a coefficient less than one implies a decreased probability. Figure 1 shows the baseline estimated survivor functions for an average male and female teacher in an average district.[4] For both men and women, exit attrition rates are higher than transfer attrition but exit attrition also falls more quickly over time.

Table 2. Competing-Risk Hazard Model Estimates

	Transfers		*Exits*	
	Women	*Men*	*Women*	*Men*
Wages:				
Teacher Salary (log)	0.848	0.319**	0.458**	0.443**
	(0.64)	(4.5)	(9.14)	(5.22)
Maximum salary in district	0.334**	0.629	0.722	0.233**
	(2.17)	(0.73)	(1.21)	(2.7)
% of average salary in region	0.257**	0.672	1.439	2.403**
	(2.75)	(0.72)	(1.53)	(2.35)
Average County Earnings (log)	1.348	0.99	0.771	1.322
	(0.69)	(0.02)	(1.08)	(0.62)
District Characteristics:				
Milwaukee	2.361**	1.823	1.206	1.892
	(2.30)	(1.14)	(0.99)	(1.57)
Rural	1.117	0.742**	1.033	1.164
	(1.0)	(2.1)	(0.51)	(1.28)

Table 2. Competing-Risk Hazard Model Estimates (Cont.)

	Transfers		*Exits*	
	Women	*Men*	*Women*	*Men*
Cost of Living Index	0.074	0.019*	1.881	0.187
	(1.46)	(1.71)	(0.84)	(1.03)
Unemployment Rate	6.981	0.72	3.968	2.697
	(0.5)	(0.07)	(0.68)	(0.27)
Total spending (log)	1.03	0.187**	2.56**	0.946
	(0.08)	(3.05)	(4.11)	(0.13)
Instructional Spending/Total Spending	0.366	0.144	0.067**	0.031*
	(0.58)	(0.86)	(2.86)	(1.95)
Student Characteristics:				
% poor students	0.597	0.766	0.863	0.254**
	(0.89)	(0.33)	(0.42)	(2.56)
% nonwhite students	1.839	3.726*	0.951	4.391**
	(1.14)	(1.69)	(0.15)	(2.88)
Nonwhite students × nonwhite students	0.354	0.138	0.241**	0.294**
	(0.55)	(1.32)	(4.24)	(2.43)
District enrollment (log)	0.828**	0.757**	1.11**	0.986
	(2.87)	(3.07)	(2.77)	(0.19)
Teacher Characteristics:				
Race (1=Non-white)	0.259	1.026	1.99**	2.949**
	(1.15)	(0.04)	(3.49)	(3.8)
Entry Age (1=enter after age 30)	0.518**	0.737**	0.685**	1.297**
	(5.49)	(2.18)	(7.11)	(2.7)
Advanced Degree	0.751	1.097	1.335**	1.149
	(1.38)	(0.44)	(3.64)	(0.98)
Math (1=teaches math or science)	1.44**	1.255*	1.021	0.748**
	(2.82)	(1.78)	(0.28)	(2.57)
Special Education	1.829**	1.413*	1.132**	0.955
	(6.14)	(1.94)	(2.34)	(0.33)
Elementary	0.783**	0.679**	0.858**	0.724**
	(2.40)	(2.17)	(3.0)	(2.64)
High School	1.295**	1.057	0.979	1.119
	(2.33)	(0.47)	(0.36)	(1.22)
Part time	1.012	0.558**	1.008	1.274
	(0.06)	(2.25)	(0.1)	(1.57)
Additional duties	1.15	1.164	1.079	0.748**
	(1.18)	(1.26)	(1.16)	(2.93)
Observations	17200	6983	17200	6982

Absolute value of robust z-statistics in parentheses
* significant at 10%; ** significant at 5%

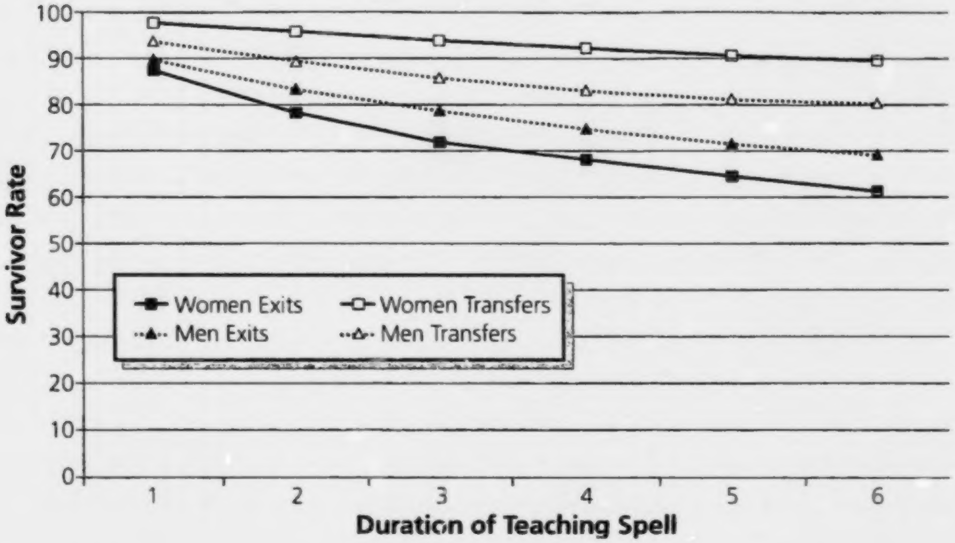

Figure 1. Baseline survivor rates.

The coefficients on district and student characteristics are not generally statistically significant but when taken together, they can reveal large differences in the transfer and exit attrition rates for various types of districts. Enrollment, percent poor students, percent minority students, unemployment, average earnings and cost of living are all higher in Milwaukee than in the base case. Rural districts have even higher unemployment but lower cost of living, and are the smallest districts, while suburban districts tend to the fewest poor students, the lowest unemployment rates and average earnings that are similar to Milwaukee. Figure 2 shows the estimated survivor functions for three representative districts (all compared to the base case from Figure 1) where the district and student characteristic variables take on the values of Milwaukee, an average rural district and an average suburban district. The characteristics of the teacher and all salary variables are the same as in the base case. Note that while there is a 40% chance that a woman in a suburban district will leave teaching by her sixth year, and a 10% chance that she will transfer to a different district, these probabilities increase to 54% and 15% in Milwaukee.

Salary

Of primary policy interest is the impact of salaries on teacher retention. Will higher salaries lead to higher retention rates? Consistent with other studies of teacher mobility, the data from Wisconsin suggest that teachers

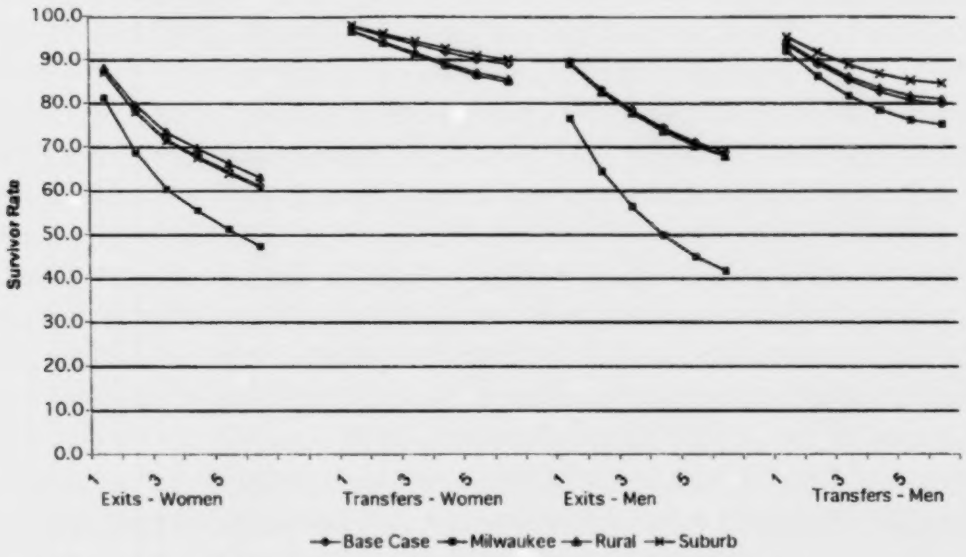

Figure 2. Simulated survivor functions for Milwaukee, Rural, Suburban.

do respond to wages. However, there are important differences in the response of teachers who are staying within the profession and those who are leaving it. There are also gender differences in the response to wages. The coefficients on current salary in Table 2 indicate that among women, increasing all teacher salaries reduces the probability of leaving teaching, but does little to stop mobility between districts. But female transfers do respond to increases in *relative* wages. That is, when salary increases are targeted so as to raise salaries in specific districts, relative to surrounding districts, women are less likely to switch districts. Interestingly, higher relative wages also *increases* the chance that a woman will exit teaching, though this effect is not statistically significant.[5] Among men, an across-the-board raise is associated with a reduction in both transfer and exit attrition and, as with women, increasing relative wages is correlated with higher exit attrition. How these offsetting effects will balance out for various districts will depend on whether they are more likely to lose teachers through transfers or exits, and the proportion of the teaching staff that is female vs. male.

Also of note is that the maximum district salary has a negative and statistically significant effect on female transfers and male exits. In fact, the hazard ratios associated with maximum salaries are even smaller for female transfers and male exits than the hazard ratios for current salary, suggesting that increasing salaries at the top end of the salary schedule could have larger effects on retention of certain teachers than increasing a teacher's current salary (remember that a smaller hazard ratio means a lower probability of leaving). Thus, depending on the composition of the teaching force, it may be more effective, in terms of retaining new teachers, for a district to change the slope of the salary schedule than the level of beginning salaries.

While increasing salaries clearly can help slow attrition, the next question is how *much* do salaries need to increase? To answer this, the estimation results from Table 2 are used to simulate various wage-increase scenarios. Beginning with the survivor functions shown in Figure 2, various wages were increased by $5000 in each year; this is roughly one standard deviation of current beginning salaries, two-thirds of a standard deviation of maximum salaries. Many states have offered bonuses somewhat less than this to teachers who are willing to teach in high-need districts (see National Council on Teacher Quality, 2001); other states have offered bonuses significantly greater (e.g., Massachusetts made headlines a few years ago with $20,000 signing bonuses for new teachers, though there was no specific requirement that they teach in urban districts). The simulations here can help shed light on whether such policies are likely to be effective for retaining teachers.

Table 3. Survivor Functions for Milwaukee: Simulations with $5000 Added to Salaries

		A		*B*		*C*		*D*		*E*	
		Actual Salary		*$5000 for All Beginning Teachers*		*$5000 for Beginning Teachers in Milwaukee*		*$5000 for All Experienced Teachers*		*$5000 for All Teachers in Milwaukee*	
Duration of teaching spell		*Women*	*Men*	*Wpmen*	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*	*Men*
Exits	1	81.1	83.6	83.7	85.9	82.4	83.2	81.6	85.5	82.9	85.1
	3	59.4	66.8	63.9	70.7	61.6	65.8	60.4	70.1	62.5	69.3
	5	50.1	56.6	54.9	61.2	52.3	55.4	51.1	60.6	53.3	59.4
Transfers	1	97.2	94.9	97.3	95.9	97.9	96.2	97.4	95.1	98.1	96.3
	3	93.1	88.1	93.3	90.2	94.9	90.9	93.7	88.6	95.3	91.3
	5	89.5	84.3	89.8	86.9	92.1	87.9	90.4	84.8	92.8	88.3

The simulation results for Milwaukee are presented in Table 3. It is important to point out that Milwaukee already offers higher wages than the average district, and generally higher wages than adjacent districts. On average, Milwaukee's beginning salaries, and relative wages, are roughly one half of a standard deviation higher than in the average district (ranging from $2400 more for second-year teachers to $3500 more for fifth-year teachers), and maximum salaries are one and a half standard deviations higher ($10,000). As shown in column A of Table 3, when the survivor functions from Figure 2 are recalculated using Milwaukee's actual (higher) wages, women continue to exit at about the same rate but men are much slower to exit. Transfer rates are also slower; in fact, at actual current salary levels, male transfer rates out of Milwaukee are even lower than out of the average district. This highlights the fact that men are more responsive than women to changes in salary, and transfers are more responsive than exits to district-specific wage changes.

When $5000 is allocated on top of current salary levels, the effect varies largely by *how* the money is allocated. Among women, increasing maximum salaries has a very small effect on either exit or transfer attrition (columns D and E). Female exits are most responsive when beginning salaries are increased across the state (column B); as noted earlier, female exits increase when relative salary increases so when raises are targeted to Milwaukee, the increase in relative salary offsets the level effect (column C). But transfers *are* responsive to changes in relative salary. Thus, the impact on overall female attrition (from transfers and exits combined) is virtually the same whether salary increases are targeted or not.

Among men, increasing maximum salaries slows exit attrition *more* than increasing district-specific beginning salaries. This is due in large part to the result mentioned earlier that exits increase when relative beginning wages rise. In fact, when only beginning salaries in Milwaukee are increased (column C), men appear to exit more quickly than they do in the base Milwaukee simulation (i.e., without any wage change at all). When salaries for all beginning teachers in the state are increased, male exits slow to about the same rate as when maximum salaries are increased. Again, district-specific raises are more effective for transfers.

It should be noted that in all cases, for both men and women, $5000 is not enough to bring overall attrition in Milwaukee down to the levels of the average district. Transfer attrition reaches comparable rates, but exit attrition rates are still higher in Milwaukee so that overall attrition remains higher.

CONCLUSION

The shortage of high-quality teachers is an issue that does not seem to be going away and for which a solution seems still to elude policymakers. A first step in solving the problem is recognizing that shortages are disproportionately experienced by certain types of districts. Urban districts, in particular, will continue to be threatened by teacher shortages as long as the conditions persist that contribute to lower teacher supply and higher teacher demand. In this chapter I have also tried to highlight the role that attrition and mobility may play in exacerbating shortages for urban districts. While much policy attention is directed at attracting more teachers into high-need areas, it is equally important to try to keep them there.

While many of the factors that contribute to shortages are outside the control of policymakers or local school officials (e.g., urban districts are likely to always be larger and serve students with different needs and problems than other districts), there is still much that policymakers can do. The one policy variable that undoubtedly receives the most attention in discussions of teacher shortages is teacher salaries. Will increasing teacher salaries help alleviate shortages? If so, how much more is needed? The focus in this chapter has been on teacher retention and the results from an analysis of Wisconsin teachers suggest that yes, increasing teacher salaries could help alleviate shortages by increasing retention of beginning teachers (and thus reducing demand for new teachers). This gives reason to be optimistic that current policies offering bonuses to teachers may pay off, particularly when those bonuses are tied to requirements that teachers remain in teaching for a specified length of time. Targeting new money is also important—policies to increase teacher salaries across the state, which do not change relative district wages at all, may be less helpful for those districts that are in the most need. Thus, policies that offer bonuses specifically for teaching in urban districts are on the right track.

The evidence from Wisconsin also suggests that in addition to beginning salaries, new teachers consider future wages in their mobility decisions, particularly male teachers. Thus, it may be worthwhile for policymakers to consider increasing salaries all along the salary schedule, rather than targeting new teachers only. It is also interesting to point out that because in general, male teachers appear to be more responsive to salary than female teachers, policies that focus on salaries may help attract and retain men in a field that has traditionally been dominated by women.[6]

How much will it take? The answer will vary depending on how the money is allocated, but the simulations for Wisconsin suggest that to reduce attrition in urban districts to levels that are similar to other districts, it could require substantial amounts of new funding. Even with salary increases of $5000, or one standard deviation of beginning salary levels, the overall rate of attrition out of Milwaukee remains higher than out of an average district. And given the size of Milwaukee, even a comparable attrition *rate* would mean a higher *number* of teachers that must still be replaced.

The political reality is that the funding for teacher salary increases is limited. It is therefore important that policies be directed so as to maximize their value. Thus, policies that target high-need districts, and that tie bonuses to length of stay in teaching are appropriate. It is also important for researchers and policymakers to learn more about non-salary alternatives for attracting and retaining teachers, such as improving teaching conditions, developing mentoring and professional development programs, etc. Although the analysis presented in this chapter supports the idea that salaries do matter, the results are stronger for men, who, on average, make up less than one-third of the teaching force overall. These gender differences may imply that it could be cheaper to focus policy efforts on alternative ways to retain teachers. More research is needed to determine whether non-monetary benefits and incentives may be more cost-effective for overall teacher retention than direct salary increases. Given that teacher shortages tend to contribute to lower educational quality for the students that are in the greatest need, it is imperative that we find practical ways to entice teachers into our urban centers, and keep them there.

NOTES

1. Unless otherwise indicated, all statistics in this section are taken from the Schools and Staffing Survey 1993–94, as reported in NCES (1997).
2. See Imazeki (2001), for a full description of the data, econometric model and estimation procedure.
3. The geographic region used for comparison is the district's cooperative educational service agency (CESA). There are twelve CESAs in Wisconsin, each covering five or six counties and ranging from 18 to 75 districts.
4. The simulated survivor functions are calculated using the coefficients from the hazard model estimation, with the values of the variables set to those of the base case teacher. The base case female teacher is assumed to be a white, elementary-school teacher with a bachelor's degree, teaching a non-math subject in a regular education program and who began teaching before age 30. She teaches in a suburban or town district with the values of all other variables set at the state means. The base case male teacher teaches high school but is otherwise the same as the base case female.
5. This result is similar to that found by Theobald and Gritz (1996). It could perhaps be explained in the following way: a teacher has decided to leave a district where salaries are relatively high, and cannot find another teaching position that pays a comparable salary. She therefore chooses to leave teaching entirely. That is, higher relative salaries may not necessarily increase the probability that a teacher will leave, so much as the probability that she will exit given that she wants to leave anyway. The competing-risk model cannot clearly differentiate these decisions.
6. On the other hand, given that men constitute a relatively small proportion of all teachers, concentrating on monetary incentives may have smaller marginal effects on overall retention goals than non-monetary incentives.

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CHAPTER 7

REDUCING NOVICE TEACHER ATTRITION IN URBAN DISTRICTS

Focusing on the Moving Target

Neil D. Theobald and Robert S. Michael

INTRODUCTION

> Teachers constitute the basic manipulable input into the educational process as conducted in schools. Whether it is done in knowledge or in ignorance, the shaping of personnel policies is the shaping of school education. (Bowman, 1973)

Changing and improving schools has become, as Seymour Sarason observes, one of the largest cottage industries in 21st century America. Innumerable strategies for school improvement have been developed and are subject to ongoing experimentation. Yet, as Bowman so aptly notes, educating children is essentially a labor-dependent enterprise, and as such,

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school improvement efforts focus on placing qualified teachers in every elementary and secondary classroom.

This chapter summarizes briefly the first component of an ongoing project that explores how many teachers are leaving urban public school districts, in four Midwest states (IL, IN, MN, WI), during their first five years in teaching. This component of the research project analyzes separately four types of novice teachers, those who: (a) taught continuously in the same district all five years ("stayers"), (b) transferred to another school district(s) within a state, but remained in the same state all five years ("movers"), (c) left public school teaching in a state and did not return (leavers"), and (d) left public school teaching in a state, but returned ("returnees"). The second component of the project consists of gathering statements from five-year veteran teachers concerning their reasons for staying in the profession. Results from the second component will be reported elsewhere. In short, the first component of this research focuses on determining which kinds of teachers are more prone to stay in teaching and the second component seeks to answer why they choose to stay.

THE ROLE OF EDUCATIONAL REFORM

Lessons from previous reform experiences suggest that policymakers in the 21st century face a formidable task in devising strategies that will improve the quality of our teaching force. The last two decades of reform were set in motion by commission reports such as *A Nation at Risk* (National Commission on Excellence in Education, 1983), which sought to rely primarily on state regulatory power, and secondarily on additional financial resources, in a direct attack on schooling problems—including teacher quality. A key assumption underlying this first wave of reform was that teachers should continue to organize their classrooms as they always had done, only do so harder and faster, and with stricter state scrutiny. Evidence quickly surfaced, though, that added bureaucracy and more centralized control did not improve teacher quality or lead to improved student achievement. Work by Darling-Hammond and Wise (1985) and Rosenholtz (1987) suggests that this first approach may actually have been counterproductive in addressing these issues.

A second reform approach ensued, seeking to reduce bureaucracy and decentralize decision making. Teaching was even more centrally the focus of this "second wave":

> Reforms began to focus on the structure of the teaching occupation and the overall structural features of schools. Thus, teachers' salaries in many states and districts were raised; teachers were often provided with some additional

> decision making authority; and, to a lesser extent, opportunities were created that would allow teachers to advance professionally without leaving the classroom (Hirsch, Koppich, & Knapp, 1998, p. 2).

The limited achievements resulting from these efforts to institute reforms such as school-based management and teacher professionalism spurred the current third wave of reform that seeks to increase the available supply of high-quality teachers. Programs such as Troops to Teachers and Teach for America were implemented nationwide to recruit new candidates into teaching. In addition, many states have instituted alternative certification programs to reduce and postpone formal education training and place mid-career professionals into teaching immediately.

Yet, the payoff from such supply-side initiatives could be short-lived if state and local policymakers do not concurrently implement policies to improve the likelihood that these individuals remain in the profession. As John Goodlad observed, "Talk of securing and maintaining a stable corps of outstanding teachers is empty rhetoric unless serious efforts are made to study and remedy the conditions likely to drive out those already recruited" (1983, p. 173).

BACKGROUND

The issue of staffing all classrooms with qualified teachers has received increased attention in recent years due to accumulating research evidence showing that teacher quality (e.g., subject matter knowledge, cognitive ability, selectivity of college attended) is the single most important school factor affecting student achievement. Hanushek, Kain, and Rivkin (1999) report that variations in teacher quality explain at least 7% of student test score differences. While 7% may not seem large, in studies of this nature, this is a large effect.

Another reason teacher supply receives considerable attention is research showing that the career of teaching is characterized by very high mobility (Ingersoll, 1995, 2001; Murnane, Singer, Willett, Kemple, & Olsen, 1991). Such high rates of teacher turnover thwart efforts to improve our schools in at least two significant ways. First, research shows that high-performing schools are distinguished by stability, continuity, and cohesion among employees (Bryk, Lee, & Smith, 1990; Coleman & Hoffer, 1987). High rates of teacher turnover can obviously disrupt the stability, continuity, and cohesion of instructors, and thus student performance. In addition, the ability of less effective schools to institutionalize a successful reform effort depends crucially on the continued presence of large numbers of teachers who are knowledgeable about, and committed to, the change (Fullan, 1991). While schools and districts undergoing reform often seek changes in staffing to align the skills and expertise of the faculty with a new vision and mission, veteran teachers play a vital role in providing continuing assistance to new teachers and administrators. Several studies point to high turnover in a school's teaching staff as one of the most powerful factors in stifling school improvement efforts (Berman & McLaughlin, 1977; Huberman & Miles, 1984).

Second, the art of teaching children is a developmental process involving a complex set of skills, many of which can be well honed only on the job. While better pre-service teacher education can begin the process of improving teacher quality, research clearly shows that inexperienced teachers continue to sharpen their skills and become more effective teachers during the first few years in the classroom. The continual need for school districts to hire new, inexperienced teachers to replace teachers who leave after a very short teaching tenure "can only hinder these districts' efforts to improve the education they provide" (Murnane et al., 1991, p. 65).

Thus, state and local policymakers have come to recognize that efforts to improve elementary and secondary education will depend critically upon our success in attracting, recruiting, and retaining capable people in the teaching profession. Simply put, we cannot have better schools until we have better teachers.

THE PROJECT: TRACKING TEACHER MOBILITY

Previous research into teacher turnover tended to focus solely on those teachers who leave the profession altogether—"leavers" or group (c) referenced in the second paragraph of this chapter (Grissmer & Kirby, 1997; Heyns, 1988; Murnane, 1987; Murnane, Singer, & Willett, 1988). As long as an individual remains in teaching, that individual is not included in such studies. Thus, the traditional approach does not differentiate between a teacher who is employed by five different school districts in a state during the first five years in the profession (a "mover") and a teacher who works in the same district for all five years (a "stayer"). These two teacher career paths have vastly different effects on local school programs, though, because "movers" are indistinguishable—from the perspective of their former employers and former students—from "leavers."

It is important to note a limitation of this study is that it does not distinguish between teachers who transfer across schools within a district, and those who move from district to district. Such distinction would help inform policy at the school level. For a school, any transfer—be it building-to-building or district-to-district—requires a teacher replacement. In this study, however, we concentrate on district-level impact and look at transfers out of district, out of state, and out of the teaching profession.

We note the decision not to include "movers" in teacher turnover is particularly important in seeking to understand teacher attrition in urban school districts. Previous work by Gritz and Theobald (1995) found that the lone characteristic predicting that a male teacher will be a "leaver" is employment in a school district educating low numbers of poor and minority students. They speculated that teachers choosing to leave such school districts are unlikely to improve their standing by transferring to a more complex school district (i.e., a district with a larger proportion of poverty students). Thus, teachers exiting less complex districts tend to leave the state system entirely (i.e., become "leavers").

As the data presented in this chapter will show, the situation is quite different for teachers choosing to leave an urban school district. In the urban districts in the four Midwestern states included in this study, the percent of children eligible for free lunch is approximately three times larger than for non-urban districts. Clearly, transferring to a teaching position in a less complex school district (i.e., a district with less poverty) could be tempting to a novice teacher because it might be seen as a chance to work in a less challenging teaching situation. The findings presented in this chapter suggest that "movers" are much more likely to leave urban than non-urban districts. Thus, previous research on teacher turnover has tended to understate the actual impact of teacher attrition on urban school districts because it ignored "movers" and focused on only one component of teacher turnover (i.e., "leavers").

This project follows the lead of Ingersoll (1995) and views teachers moving among school districts ("movers") to be equally important for analysis as those teachers exiting from the profession ("leavers"). "The premise underlying this perspective is that, whether those departing are moving to a similar job in another organization or leaving the occupation altogether, their departures similarly impact and are impacted by the organization" (Ingersoll, 2001, p. 356). From the perspective of the school, whether a departing teacher is moving to another district or leaving the profession, that individual most likely must be replaced.

The focus on teacher retention within a school district does not, of course, reflect a view that previous research into attrition from the profession is unimportant. Instead, this focus is motivated by a judgment that those decisions most likely to influence teacher retention occur at the district level. Therefore, rather than investigating the behavior of a state's teachers, this study analyzes the behavior of teachers within a school district.

The second component of this project is an ongoing survey of 1,000 public school teachers who have continuously taught in the same districts for five years ("stayers"). This component will further our understanding of district characteristics that play a prominent role in their decision to continue teaching. In particular, this portion of the study examines the role of employee compensation, administrative support, and the degree of teacher input into and influence over school policies. These results will be reported elsewhere.

The objectives of this study, thus, are twofold: first, to document teacher turnover in four Midwest states, and second, to examine closely the role of school characteristics and conditions in teacher turnover. The results of the first component are summarized on the following pages.

The data set used for this study consists of information on 11,787 teachers who began their teaching careers in four Midwest states during the 1995–96 school year. This chapter focuses on the 3,194 teachers whose first teaching position was in an urban school district. Urban districts were identified by the metropolitan status code assigned each district by the National Center for Educational Statistics in the common core of data (NCES, 2001). The data set provides information on the characteristics of teachers and their job assignments and includes variables such as gender, ethnicity, age, base salary, level of academic degree, level of primary teaching responsibility, type of district, subject area taught, and employing district. The career of each teacher in the data set is followed from the year of entry through the 2000-01 school year.

FINDINGS

Teaching is an occupation that loses many of its newly trained practitioners very early in their careers. As shown in Figure 1, over the five-year period, the cumulative losses of beginning teachers from the school district that hired them was slightly more than 50%, consisting of 23% who moved to different districts and 28% who left teaching altogether. These percentages are consistent with previous national findings (Ingersoll, 1995).

Personal Characteristics and Turnover

Figure 1 also provides information on the relationship between personal characteristics of teachers and the likelihood that they leave their district. In terms of overall teacher turnover—the sum of the percent of teachers that move between districts and the percent that leave the profession—minority teachers and teachers who enter the profession at age 30 or younger depart at significantly higher rates. Teachers who are 31 or older when they enter the profession and teachers with graduate degrees are significantly less likely to depart. White teachers are also less likely to depart,

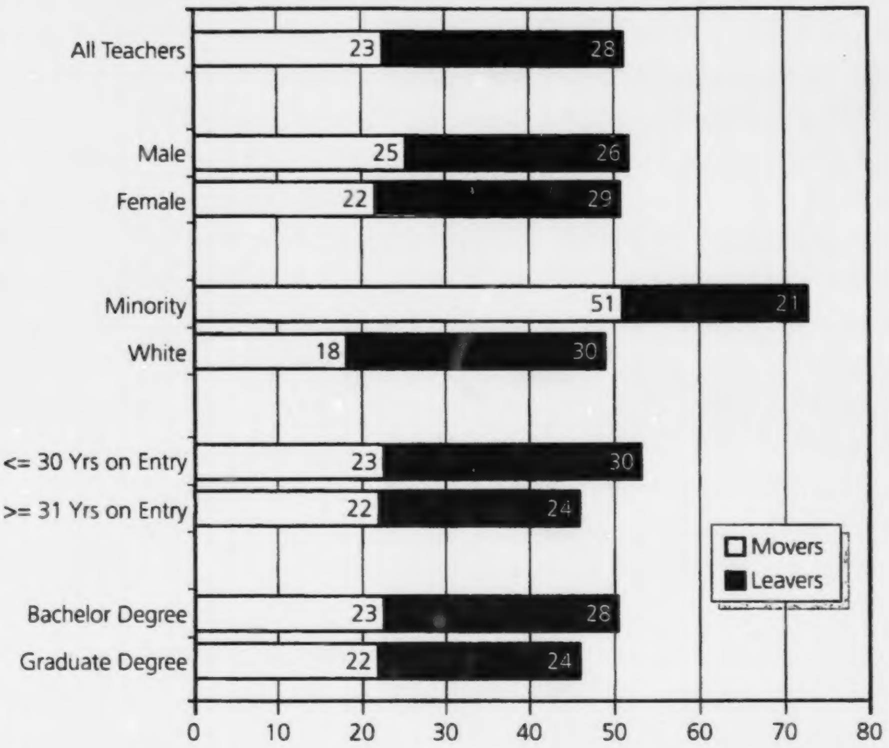

Figure 1. Percent of teacher turnover in five years among 11,787 teachers who entered the profession in four Midwestern states in 1995–96, by selected personal characteristics.

but this relationship is not as strong as it is for those teachers who enter at an older age or possess a graduate degree.

Impact of Traditional and Enhanced Definitions of Turnover

The results illustrated in Figure 1 emphasize the importance of clearly specifying how "teacher turnover" is to be defined. If we look at the traditional definition of "teacher turnover" (i.e., those teachers who leave the profession altogether), minority teachers are significantly *less* likely to leave the profession. Researchers have concluded that minority teachers, because they tend to come from lower SES backgrounds, are less occupationally mobile than Whites (Dworkin, 1980; Kemple, 1989). However, the results in Figure 1 show nuanced behavior. While minority teachers are less likely to leave the profession altogether, they are much more likely to transfer among school districts. Theobald and Gritz (1996, p. 21) found that "teachers transfer from their first teaching position to another school dis-

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trict when they confront less desirable situations that are amenable to improvement by transferring to a different public school district" and they leave the profession when confronted with "less desirable situations that cannot be improved by moving to another school district." Thus, it appears that minority teachers are more able to improve their situation by transferring to another district than are other teachers. A possible explanation for this result is that high demand for minority teachers provides them with more job options than are available to other teachers.

Another interesting finding in Figure 1 is the lack of a significant difference by gender. Data from the 1960s and 1970s show that turnover rates among females entering teaching was about 30% higher than attrition among men entering at that time. Grissmer and Kirby (1987) explain this result by appealing to the differing "life cycle priorities" of young women and young men and argue that women were more likely to leave teaching because they do so to raise families. These data suggest that, in the late 1990s, this traditional pattern no longer exists in these four states.

The remaining results are consistent with previous research. Greenberg and McCall (1974) found previously that teachers with graduate degrees had lower turnover rates. Several previous studies found that teachers' decisions whether to stay or leave the teaching profession are highly influenced by their age at entry (Bobbitt, Leich, Whitener, & Lynch, 1994; Boe, Bobbitt, Cook, Barkanic, & Maislin, 1998).

Urban Teacher Turnover

Figure 2 provides the same information for the 3,194 novice teachers hired by urban school districts in 1995–96. Previous research (Darling-Hammond & Green, 1994; Kozol, 1991; Oakes, 1990; Rosenholtz, 1985) has speculated that urban teachers have a higher turnover rate. These data clearly support this finding. Urban teachers—regardless their gender, race, age, or degree status—are significantly more likely to move out of their district than are novice teachers hired by non-urban districts. Yet, urban teachers are no more likely to leave teaching than are non-urban teachers.

This result highlights the importance of including "movers" in an analysis of teacher turnover. The more narrow definition of turnover (i.e., only those who leave the teaching profession) would lead us to conclude that turnover rates are no higher in urban than in non-urban districts. When we include "movers," though, the turnover rates for minority and older teachers are more than 20% higher in urban districts than they are in non-urban districts.

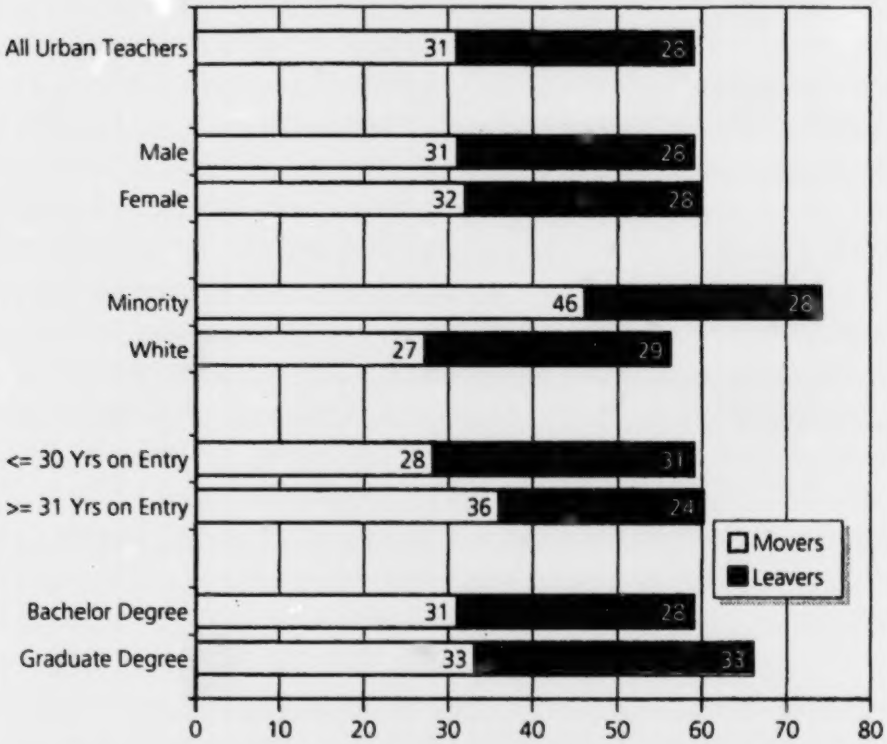

Figure 2. Percent of urban teacher turnover in five years among 3,194 teachers who entered the profession in four Midwestern states in 1995–96, by selected personal characteristics.

Subject Area Taught and Turnover

Among the most important findings in previous research is the influence of academic field on teacher turnover. Ingersoll (2001) reports "although both special education and math/science teachers were more likely to migrate [i.e., move] than other kinds of teachers, neither was more likely to leave teaching altogether" (pp. 519–520). The data in Figure 3, which includes both urban and non-urban teachers, concur with this finding for special educators, but differ substantially for math/science teachers. Novice special educators in these four states are more likely to transfer to another school district, but are not any more likely to leave. As with minority teachers, it may be that high demand for special education teachers provides them with a greater ability to improve their situation by transferring than is available to other teachers.

Figure 3 shows, however, that mathematics teachers—and all science teachers except those in biology—are much more likely to leave teaching

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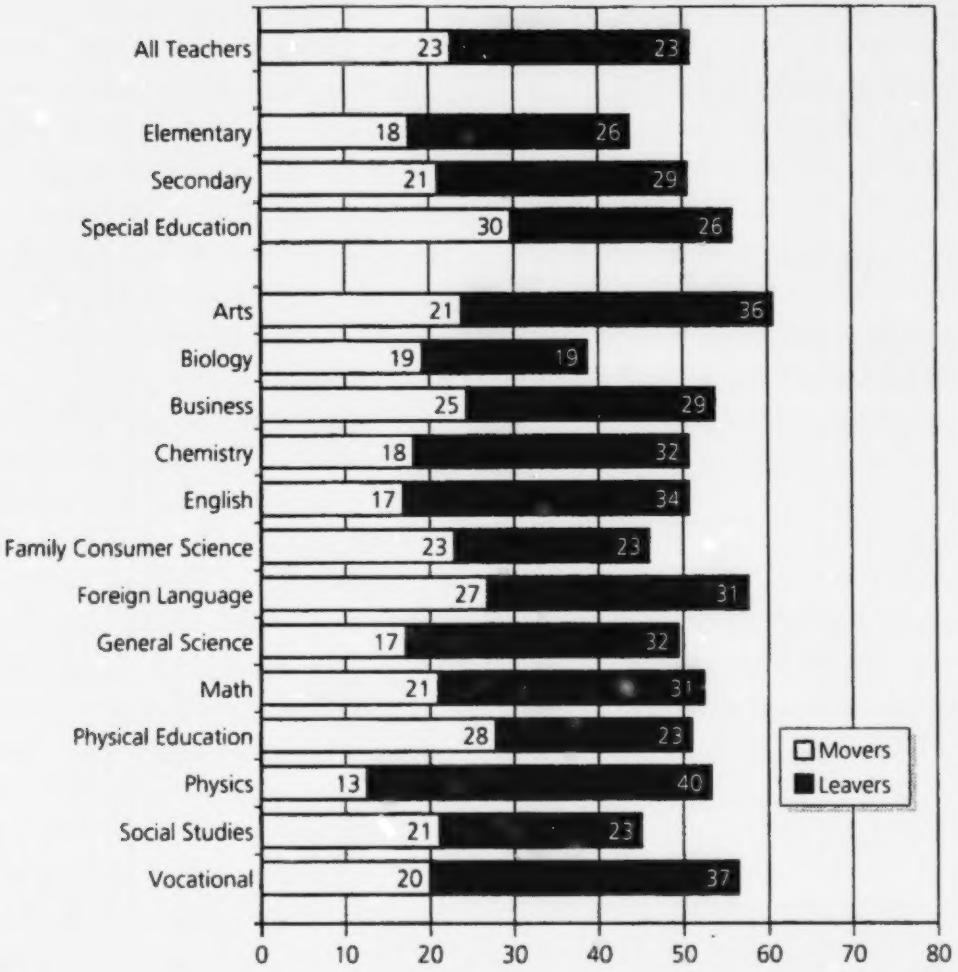

Figure 3. Percent of teacher turnover in five years among 11,787 teachers who entered the profession in four Midwestern states in 1995–96, selected by professional characteristics.

and are less likely to transfer among school districts. A variety of incentives influence the labor market decisions teachers make. One set of incentives is the salary an individual can earn in teaching compared to salaries in alternative occupations. Research has shown that math and science teachers can expect higher salaries in their alternative professions than do other teachers and therefore might be more likely to leave (Murnane et al., 1991). Interestingly, in these four states in the late 1990s, biology teachers were the least likely to leave. Clearly, the alternative career paths available to individuals trained as high school biology teachers—as well as those teaching family consumer science, physical education, and social studies—

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differ substantially from those open to individuals trained in physics and chemistry. Why math and science teachers would be more likely to move among schools is subject to further investigation. One possibility may be that the level of subject area expertise needed to meet the certification requirements for physics and chemistry teachers equips them with sufficient skills that these individuals are attractive to non-school employers. Although certification for biology teachers requires subject matter expertise, individuals may still lack the highly sophisticated technical skills—for example, skills required for gene-splicing and DNA mapping—that life-science and drug companies seek.

The impact of academic field on being a "mover" is also quite striking. Physical education teachers are the most likely to move and physics teachers are the least likely to move. To return to the reasoning discussed earlier for minority teachers and special educators, it appears that physical education teachers are able to improve their situation by transferring, while physics teachers cannot. The second component of this study should provide more definitive evidence, but anecdotal reports suggest that because physical education teachers are much more likely to be coaches, a transfer to another school district allows them to "move up the ladder" in a way that is not available to physics teachers—especially if the less desirable situation facing the physics teacher is relatively low pay compared to what she or he could earn outside of the teaching profession. Few school districts pay teachers in high-wage academic fields more than they pay teachers in low-wage fields.

Figure 4 provides the same information on the influence of academic field on the turnover rates of 3,194 novice teachers hired by urban school districts in 1995–96. As before, the more narrow definition of turnover that excludes "movers" would suggest that attrition among urban teachers is no higher than among non-urban teachers. However, when "movers" are included, special educators, business teachers, foreign language teachers, and math teachers have significantly higher turnover rates in urban districts than they do in non-urban settings.

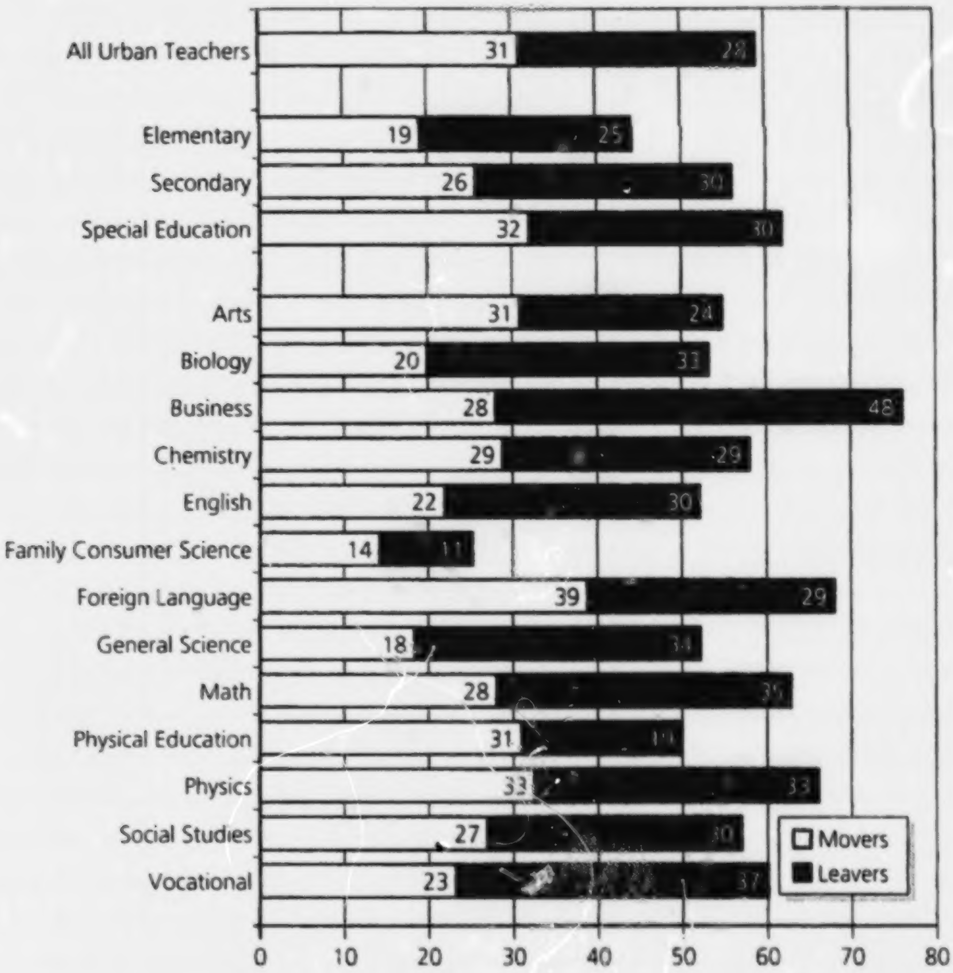

Figure 4. Percent of urban teacher turnover in five years among 3,194 teachers who entered the profession in four Midwestern states in 1995–96, by selected professional characteristics.

IMPLICATIONS

Although the second component of this study, to be reported elsewhere, will provide much needed data on why these differences exist, three implications seem clear. First, for the foreseeable future, efforts to improve elementary and secondary education will hinge upon our nation's ability to attract and retain qualified individuals in teaching. Second, teachers' decisions to leave their classrooms are the result of the thoughtful actions of individuals responding to incentives inside and outside of education.

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Lastly, state and local policymakers should think in terms of increasing or decreasing the magnitude of these incentives as they formulate policies to lower rates of turnover, and ultimately, improve student performance. As John Dewey observed nearly a century ago, "All other reforms are conditioned upon reform in the quality and character of those who engage in the teaching profession" (1903, p. 194).

POLICY RECOMMENDATIONS

The evidence presented in this report suggests that the current focus on addressing supply-and-demand issues through macro-level, statewide initiatives such as Teach for America, mandatory mentorship programs, and generic alternative certification programs may be misplaced. While each of these initiatives may be important for solving other problems facing the teaching profession, they are not well suited for addressing the micro-level supply-and-demand issues facing urban districts. Consistent with prior empirical research (Gritz & Theobald, 1995; Ingersoll, 1995, 2001; Theobald & Gritz, 1996), the data show that Midwest schools face excess demand for new teachers caused by teacher turnover rates in the first five years that exceed 50%. For urban districts, turnover rates in the first five years are nearly 60%. Therefore, rather than outlining policy recommendations for a state's teachers, this section seeks to influence the behavior of teachers within school districts.

The focus on increasing teacher supply is likely to prove inadequate—especially for poorer and more complex districts, such as urban school districts, that are rarely on the receiving end of teacher transfers—if new teachers brought into the profession continue to move and leave in such large numbers. Thus, state policies need also—if not primarily—to address this issue from the demand-side by decreasing turnover rather than focusing solely on the supply-side.

Options for addressing these factors include:

1. Providing higher funding to school districts with more disadvantaged students. What is most striking in the survey responses is the utter lack of comments about "difficult kids" or "discipline problems." What the surveys focus on instead is the difficulty in remaining altruistic in the face of a perceived lack of resources in some districts for providing smaller classes and the personal attention children need.
2. Creating an external context in all school districts that is supportive of novice teachers and their work. Survey results suggest that novice teachers find their colleagues and school-level principals very sup-

portive. However, the next layer of interactions—those involving parents and superintendents are much more varied. In a sizable number of school districts there appears to be a mismatch between the goals and aspirations of those in the school and those most closely involved with, but outside, the school. States might review the superintendent and teacher preparation programs in their state universities to ensure that potential teachers and superintendents are well prepared to work in urban and poor rural districts. They might also launch education programs for parents in urban and poor rural districts that seek to provide them with the tools to be supportive of their children's education.

3. Specifying desired learning outcomes with sufficient restraint for classroom teachers to have a reasonable say as well. The novice teachers surveyed in this report are well satisfied with the autonomy they currently have. As they move to implement new federal legislation, states must be cognizant of the extreme importance that teachers place on the freedom to make their own decisions regarding what is taught, and instructional approaches used.
4. Providing pay premiums for novice teachers in high attrition districts (i.e., compensating differentials). The goal of this salary premium is to allow these districts to compete better for the best new teachers.

Despite decades of court-ordered funding remedies, the most needy children in America continue to be concentrated in schools without a corresponding concentration of the resources necessary to meet those children's needs (Kantor & Brenzel, 1992; Kozol, 1991). The purpose of this chapter has been to document teacher turnover in urban school districts in four Midwest states and examine closely the role of school characteristics and conditions in this teacher movement. Much of this current labor market activity may actually be amplifying, rather than minimizing, the educational advantages that better off students receive as a result of their families' social position.

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authors and do not necessarily reflect the views of the Laboratory. All errors in analysis and reasoning are, of course, the responsibilities of the authors. Correspondence concerning this article should be addressed to Robert S. Michael, Indiana Education Policy Center, Smith Research Center, Suite 170, 2805 East Tenth Street, Bloomington, Indiana 47408-2698.

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Part III

EQUITY AND ADEQUACY IN URBAN SCHOOLS

CHAPTER 8

THE ADEQUACY OF URBAN EDUCATION

Focusing on Teacher Quality

Whitney Allgood and Jennifer King Rice

INTRODUCTION

Equity has long been a central focus of urban education policy, and conceptions of what constitutes equity have varied across time, place, and individual perspective.[1] While most of these understandings of equity have focused on the allocation of inputs (e.g., dollars, services, programs), the current principle of adequacy focuses on both school inputs and educational outcomes. Guthrie and Rothstein (2001) define adequacy as "sufficient resources to ensure students an effective opportunity to acquire appropriately specified levels of knowledge and skills" (p. 103). Given the simultaneous emphasis on inputs and outcomes, adequacy represents the convergence of two previous reform streams—the equity-based school finance reforms of the 1970s and the excellence movement of the 1980s. Each of these eras of reform sought to address a compelling educational

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problem and each arguably fell short of meeting its envisioned potential. By linking the goals of equity and excellence, adequacy holds new promise for public policy that might realize both.

Adequacy-based challenges to school finance systems have been successful in a dozen states and are pending in several others.[2] While some plaintiffs argue that all districts in a state have failed to provide an adequate education (e.g., Kentucky and Massachusetts) others have focused on the inability of poor, urban districts to do so (e.g., New Jersey) (Berne & Stiefel, 1999). Adequacy-based challenges are increasingly being brought on behalf of large urban districts. While these districts may spend the same or more per pupil than the state average, large urban centers still fall short of providing an adequate education due to a variety of reasons including the greater needs of their students and the higher costs associated with providing educational services, (e.g., *Campaign for Fiscal Equity v. State of New York*) (Minorini & Sugarman, 1999). In fact, some school finance scholars argue that adequacy is actually a problem of poor urban districts. Clune (1995) notes that 95% of sub-minimal educational outcomes occur in just 5% of the nation's schools, schools located in central cities.

This chapter addresses the adequacy of education in urban areas, paying special attention to one key component of an adequate education: teachers. The first section discusses the adequacy movement in terms of its promise for advancing goals of equity and excellence. The second section identifies common components considered in adequacy models, and focuses on the teacher qualities known to contribute to an adequate education. The third section presents data on the adequacy of education in urban schools in terms of student outcomes and teacher resources. The fourth section describes the challenges urban schools face in retaining high quality teachers, examines evidence on teacher sorting patterns and preferences, and overviews the range of efforts being made in urban school systems to enhance the adequacy of their teaching forces. The fifth and final section highlights key points made in previous sections and draws some general conclusions about adequacy in urban schools with respect to teacher quality.

THE PROMISE OF ADEQUACY: MERGING EQUITY AND EXCELLENCE

The principle of adequacy inextricably links goals of equity and excellence. The tie that binds adequacy to equity is the belief that a state's educational resources should be fairly allocated across all student groups in all state locales. The legacy of equity-based school finance reform is fiscal neutrality which specifies that there should be no relationship between "the education of children and the property wealth (or other fiscal capacity) that supports the public funding of that education ... [and] that taxpayers should be taxed at equal rates to fund equal education per child (generally defined as equal spending per child)" (Berne & Steifel, 1999, p. 16). After three decades of equity-based school finance reform, school funding systems are generally more equitable, but true fiscal neutrality has not been achieved and many of the equity gains made have been lost over time (Carr & Fuhrman, 1999).

The tie that binds adequacy to excellence is a belief that all students can and should be expected to achieve an absolute level of academic proficiency. The legacy of the excellence movement in education is standards-based reform with high-stakes accountability wherein most states have delineated a set of academic standards that all students are expected to meet, designed tests to measure student progress toward meeting the standards, and developed systems of accountability that publicly recognize and reward (or punish) districts and schools for their progress (or lack thereof) in meeting state standards (*Education Week*, 2001; Smith & O'Day, 1990). By some measures, standards-based reform is inching toward its goals; test scores in some states are rising, expectations are rising, and school curricula and teacher practices are gradually changing to reflect state standards (*Education Week*, 2001). Unfortunately, many states are failing to provide the support necessary to meet standards, particulary in schools serving large concentrations of poor and minority students (*Education Week*, 2001). After more than a decade of standards-based reform reflecting the belief that all students can and should achieve an absolute level of academic proficiency, many states have yet to see the majority of their students achieving such levels (*Education Week*, 2001), and variations in student achievement are still highly related to socioeconomic status, race and ethnicity (Berne & Steifel, 1999; NCES, 2000).

The shortcomings of equity-based and standards-based reform movements are most obvious in urban schools. The resources available to students in urban schools are still inequitable relative to those available to students in suburban and rural schools (Lippman, Burns, & MacArthur, 1996; NCES, 2000), and urban students do not perform as well as non-urban students on standardized assessments (NCES, 2000). The failure of urban schools to keep pace with non-urban schools on both input and output measures is no doubt partially related to factors unique to the urban context which inhibit their ability to translate educational resources into educational outcomes. Urban schools face higher costs than non-urban schools, have relatively more students with exceptional needs who require more resources, and are located in areas where the tax base must cover more non-educational services, thus leaving fewer dollars for education (Minorini & Sugarman, 1999). In short, relative to non-urban schools, many urban schools have limited capacity to raise the money necessary to purchase the educational resources required by the students they serve, and limited capacity to translate educational resources into student outcomes that meet state standards. The principle of adequacy recognizes the variable capacity of students, schools, and districts to translate educational resources into educational outcomes and therefore, is especially appealing to advocates for improving educational opportunities in urban schools (Minorini & Sugarman, 1999).

The problem and the promise of adequacy-based reform is that it forces the educational community to identify the academic proficiencies it most wants all students to achieve and to identify the school inputs most likely to facilitate such achievement. In terms of determining the outcomes that denote an adequate education, state courts are increasingly able to refer back to student performance on standardized assessments that are linked to state-established learning standards. In most cases states have already identified the outcomes they expect all students to achieve; if the court finds that these outcomes are consistent with the state constitution's guarantee of a substantive level of education, then there is no need to define new outcomes. Once the learning standards are established, information is needed on the educational components or inputs (and their cost) necessary to provide all students the opportunity to meet those standards. While progress is being made in the area of education production functions (i.e, the study of the relationship between school inputs and outputs), much remains to be learned about what resources, in what quantities, and under what circumstances lead to learning. Perhaps the greatest promise of adequacy-based school reform is that it will promote a greater accumulation of knowledge about the relationship between school inputs and student outcomes. In the meantime, there are a number of methods for identifying the costs and/or components of an adequate education. While some of these methods employ complex statistical techniques that attempt to isolate the incremental contributions to student outcomes made by individual educational inputs, others rely on the expertise of professional educators in identifying the educational resources that have the largest and most reliable affect on student learning. It is beyond the scope of this chapter to detail all of these methods; however, no matter the method used, qualified teachers emerge as a key component of an adequate educational program.

MODELING AN ADEQUATE EDUCATION: A FOCUS ON TEACHER QUALITY

Educational costs are influenced by a number of input variables that potentially have consequences for the adequacy of educational outcomes. The amount of time spent in school, early education opportunities, intensity and scope of services offered, condition of school buildings, access to instructional resources and technology, curricular offerings, and size of the schools and classes are examples of the variables that affect the costs and presumably the quality of education. Reasonable and informed professionals debate the extent to which such factors affect student outcomes and how much of the education budget should be assigned to each area to achieve maximum productivity. However, there is little disagreement regarding the importance of teachers in education; policymakers, professional educators, and researchers agree that teacher quality affects the quality of education (Darling-Hammond & Post, 2000; Ehrenberg & Brewer, 1995; Ferguson, 1991, 1998; Haycock, 2000; NCES, 2000; NCTAF, 1996; Phillips, Crouse, & Ralph, 1998; Sanders & Rivers, 1996). Teacher quality is a also a relevant factor in discussions of equity and adequacy since the bulk of education spending goes toward purchasing teacher time; teacher salaries account for at least 50% of typical school district expenditures (Guthrie & Rothstein, 1998).

Despite general agreement about the importance of high quality teachers, researchers, practitioners, policy makers, and the public have been unable to reach a consensus about what specific qualities and characteristics make a good teacher. Numerous studies have examined the relationship between various teacher attributes and desired educational outcomes. These studies reflect much variability in terms of the teacher characteristics examined, the educational outcome of interest, the methodology employed, and the findings reported. Taken together, this diverse body of research provides evidence about the impact of multiple measures of what a teacher knows and can do (particularly those qualifications assumed in hiring and compensation policies to reflect "quality") on teacher performance. Gaining a clearer understanding of the empirical evidence on this relationship can inform policy makers concerned with realizing the goal of adequacy in public education.

This section of the chapter reports findings from a recent analysis of a wide variety of empirical studies examining the impact of teacher attributes on their performance.[3] The studies were mainly drawn from academic journals that engage in formal peer review processes as one quality control consideration.[4] Most of the studies are from the past two decades. The review focused on studies that were designed explicitly to test hypotheses about the relationship between policy-relevant teacher characteristics and measures of teacher performance. The goal of the review was not to "boil down" the studies to quantitative summaries of what matters, but rather to synthesize the literature in ways that bring qualitative meaning to the array of studies that have been conducted.

The studies included in this review vary along a number of dimensions. First, while all of the studies assess the relationship between teacher characteristics and their performance, the specific outcomes vary across studies. In an effort to cast the widest net possible in understanding the effect of teacher attributes, this review includes studies that measure teacher performance in a variety of ways including student achievement gains, principals' evaluations of teachers, measures of teacher competence and skills, grade point averages of students, and teachers' perceptions of their own performance and the quality and impact of their preparation. Second, the studies of teacher quality vary in terms of the methodology used. In an effort to examine the full range of empirical evidence, the review includes a variety of studies along this "methodological continuum" including sophisticated multivariate psychometric or econometric techniques using large national datasets, matched-comparison designs, as well as simple bivariate correlational analyses. Finally, the studies included in this review vary in terms of the teacher characteristics they examine. This review focuses on four broad categories of policy-relevant characteristics generally assumed to be reflective of teacher quality: (1) teacher preparation program and credentials, (2) the specific coursework taken by teachers, (3) teacher performance on test scores, and (4) years of experience.

The Impact of Teacher Preparation Programs and Credentials

One indicator of the quality of teachers concerns the "package" of their professional preparation, without explicit attention to the individual components of that package (e.g., specific courses) or to the skills and knowledge acquired. Teacher preparation has been studied in terms of whether teachers have graduated from a teacher education program (including the quality of the institution attended), whether they have completed an extended teacher education program (adding to the typical number of years of schooling) or earned an advanced degree, and whether they have earned state certification to teach (through traditional versus alternative routes). The studies reviewed pertaining to the impact of teacher education programs and credentials on their effectiveness offer several insights.

Selectivity of the Institution Attended

- Research suggests that the selectivity/prestige of the institution attended by the teacher has a positive effect on student achievement at the secondary level (Ehrenberg & Brewer, 1994; Summers &

Wolfe, 1975, 1977). Some have argued that this is a reflection of teachers' cognitive ability.

Advanced Degrees

- Evidence from a set of quasi-experimental studies controlling for student and teacher characteristics suggests that the teachers who have earned advanced degrees have a positive impact on high school mathematics achievement only when the degree is earned in mathematics (Goldhaber & Brewer, 1997b, 2000; Ferguson & Ladd, 1996; Rowan, Chaing, & Miller, 1997).
- Evidence regarding the impact of advanced degrees at the elementary level is mixed with some studies reporting a negative effect (Eberts & Stone, 1984; Kiesling, 1984; Murnane, 1975), and others finding no significant effect at all (Link & Rateledge, 1979; Murnane & Phillips, 1981; Summers & Wolfe, 1975, 1977).

Certification

- Research has demonstrated a positive effect of certified teachers on high school mathematics achievement when the certification is in mathematics (Goldhaber & Brewer, 1997a; Hawk, Coble, & Swanson, 1985).
- Studies show little clear impact of emergency or alternative route certification on student performance in either mathematics or science, relative to teachers acquiring certification through standard channels (Goldhaber & Brewer, 2000; Guyton, Fox, & Sisk, 1991; Hawk & Schmidt, 1989; Lutz & Hutton, 1989; Miller, McKenna, & McKenna, 1998; Stafford & Barrow, 1994). One explanation for this finding is that those holding emergency or alternative route certification have actually received similar preparation to those holding standard certification (see Darling-Hammond, 2001).

The Impact of Teacher Coursework

Measures of the level and type of coursework taken by teachers represent proxies for what teachers know and can do in the sense that coursework indicates the degree of exposure individuals have had to particular areas of study. Studies on this topic fall into two basic categories: (1) the amount of coursework taken in particular areas (e.g., education courses versus subject matter courses), and (2) the contribution of field experiences like student teaching. The studies of the impact of teacher coursework vary in terms of the measures, data, and methods used. Nonetheless, they are rather consistent in their findings. Taken together, they suggest that teacher coursework in both content area and pedagogy contributes to positive educational outcomes, but the relative impact of their effects varies (Eberts & Stone, 1984; Ferguson & Womack, 1993; Monk, 1994; Monk & King, 1994; Perkes, 1967). Specific findings are as follows:

- While teacher coursework in both subject-matter and pedagogy have been shown to contribute to positive educational outcomes, investments in the area of subject-matter preparation may have diminishing returns after some point; the point at which the effect of additional subject matter courses becomes zero depends on the subject area (Monk, 1994).
- Pedagogical coursework has been shown to predict teacher effectiveness at all grade levels, but evidence of the importance of coursework in content areas is most apparent at the secondary level. This research is limited to science and mathematics.
- While the studies on the field experience component of teacher education are not designed to reveal causal relationships, they suggest positive effects in terms of opportunities to learn the profession and reduced anxiety among new teachers (Clark, Smith, & Newby, 1985; Goodman, 1985; Grossman & Richert, 1988; Piggie, 1978; Silvernail & Costello, 1983).

The Impact of Teacher Test Scores

Teachers' scores on tests are arguably the best indicator of what a teacher knows and can do since they go beyond measuring exposure to programs and specific courses to actually assess the knowledge and skills that individuals have acquired.[5] A variety of teacher assessments have been adopted by individual states as criteria for entry into the profession (Latham, Gitomer, & Ziomek, 1999). Taken together, the research suggests that some test scores seem to predict high levels of teacher performance and desired educational outcomes.

- Tests that assess the impact of literacy levels or verbal abilities of teachers have been shown to be associated with higher levels of student achievement (Coleman et al., 1966; Ehrenberg & Brewer, 1995; Ferguson, 1991, 1998; Ferguson & Ladd, 1996).
- Studies show that the NTE and other state-mandated tests of basic skills and/or teaching abilities do not appear to be strong predictors

of teacher performance (Andrews, Blackmon, & Macky, 1980; Ayers, 1988; Ayers & Qualls, 1979; Dorby, Murphy, & Schmidt, 1985; Piper & O'Sullivan, 1981; Quirk, Witten, & Weinberg, 1973).

The Impact of Teacher Experience

Teacher experience has long been recognized as an important factor in teacher salary schedules, and is typically considered an indicator of teacher quality. While research indicates a positive relationship between student achievement and teacher experience, it appears that the relationship is only discernible in the first few years of teaching.

- Several studies find that after the fifth year of teaching, the effect of experience drops off (Ferguson, 1991; Ferguson & Ladd, 1996; Murnane, 1975; Murnane & Phillips, 1981). Others have found the effect to disappear even earlier (Grissmer et al., 2000; Hanushek, Kain, & Rivkin, 1998).

Other Findings on Teacher Quality

In addition to the conclusions drawn about the four categories of teacher qualities and qualifications, several other findings emerged from the literature review.

- Many of the studies revealed the importance of aligning teacher preparation with teaching assignments (e.g., Goldhaber & Brewer, 1997a, 2000; Hawk et al., 1985; Monk & Rice, 1997).
- Several of the more methodologically-sophisticated studies included in this review demonstrate that the impact of teacher characteristics appears to depend on a number of factors including student characteristics, teacher attributes, level of education, and subject area.
- Taken together, the studies reviewed in this paper provide evidence that more refined measures of what teachers know and can do (e.g., specific coursework) are better predictors of teacher and student performance than are more conventional measures (e.g., highest degree earned, undifferentiated course credits).

Summary

One major finding from this literature review pertains to the limited knowledge we have about the impact of teacher characteristics on student performance. For instance, many of the findings presented here pertain only to secondary level mathematics and, to a lesser degree, science. Greater attention should be devoted to gaining a clearer understanding of elementary education, as well as subjects other than mathematics and science at the secondary level. While this literature exposes a number of significant gaps in our knowledge about the relationship between teacher characteristics and their effectiveness, it does provide a starting point for thinking about the adequacy of teacher quality.

This review suggests that an appraisal of teacher adequacy should consider the following four characteristics. First, the most effective teachers are those who are certified in the subject area he/she teachers. Second, effective teachers have taken coursework in the subject area in which they teach (particularly for secondary teachers in math and science), as well as coursework in pedagogy (for teachers across all grade levels). Third, the more effective teachers are those who earn higher scores on literacy tests. Finally, teachers who have at least five years of experience are more effective than their novice counterparts.

THE ADEQUACY OF EDUCATION IN URBAN SCHOOLS

Neither equity-based school finance reforms nor excellence-based standards reforms have closed the achievement gap between urban and non-urban schools (Clune, 1995; Lippman et al., 1996; Minorini & Sugarman, 1999; NCES, 2000). According to adequacy theory, as well as legal precedent in adequacy-based cases, evidence of inadequate inputs and outcomes, either relative to an absolute criterion or relative to a norm, can be used to show that some or all students are not receiving an adequate education. Here we examine evidence on the current status of student outcomes and teacher teacher quality in urban schools to understand better the adequacy of urban education.

Student Outcomes in Urban Schools

Any analysis of student outcomes in urban schools requires an acknowledgement of the complex and interactive relationship among student demographic factors (e.g., race, income), school location (i.e., urban, rural, suburban), and student achievement. Many of the student-level factors that influence achievement are also associated with school location. Students who are poor, who are non-white, and/or who speak English as a second language are at greater risk for school failure than non-poor, white students whose primary language is English; the former group(s) of students are more likely to live and attend schools in urban areas (Lippman et al., 1996; NCES, 2000). Further, many of the school-level factors that have been shown to influence achievement are also associated with school location. Research has shown that concentrated levels of poverty at the school level have a separate impact, above and beyond the individual-level effect of poverty, on the outcomes of *all* students attending high-poverty schools (Lippman et al., 1996).[6] Urban schools are more likely than non-urban schools to serve large concentrations of poor students (Lippman et al., 1996).

Finally, researchers have found that the urban context in and of itself has a separate and identifiable impact on some student outcomes, above and beyond the impact of school poverty concentration (Lippman et al., 1996; NCES, 2000). Perhaps the best way to address the issue is to understand that all students, even white middle class students, attending urban schools are at greater risk for academic failure than students in rural and suburban schools.[7] Evidence also suggests that students attending urban schools have a greater probability of attending schools where the available resources are inadequate relative to their needs and the educational levels they are expected to achieve.

In one of the most comprehensive studies of the relationship between school setting and student outcomes, Lippman et al. (1996) sought to determine how much of the variation in a number of factors (student background, school experiences, and academic outcomes) was explained by poverty concentration across school settings. Their research included students attending public schools primarily in the 1980s and examined outcomes through 1990. They found that urban high poverty schools had a higher concentration of poverty on average (69%) than either suburban high poverty (60%) or rural high poverty (61%) schools. Urban students were less likely to complete high school, more likely to be absent, less likely to be employed full time or be attending college four years after high school, and more likely to live in poverty and be unemployed later in life (Lippman et al., 1996).

Lippman et al. (1996) found that, even after controlling for student background factors like race and family income, 8th grade students in urban schools scored lower on achievement tests than their peers in suburban and rural schools, but found no significant differences in achievement at the 10th grade level. The inability to detect a significant difference in achievement at the 10th grade level may be partially attributable to the fact that urban students are more likely to drop out of school; thus, the lowest scoring students may have exited the system by this time. Data from the 1996 National Assessment of Educational Progress indicate that while less than 50% of urban students scored at or above the basic level in reading, 63% of students in non-urban schools did. Results were similar for math (NCES, 2000).

Teacher Quality in Urban Schools

As described above, poor children are more likely to live and attend school in urban areas, and urban schools have larger average concentrations of poverty than non-urban schools. National data indicate a negative relationship between the number of poor children in a school district and the amount of education spending so that school districts with less than 2% of children living below poverty spent an average of $3,753 per student on instruction in 1995–96, while districts with 19% or more of students living below poverty spent $3,459 per student on instruction (NCES, 2000). Thus, schools serving large concentrations of poor students, many of which are concentrated in urban areas, are less able to provide adequate instructional resources.

Some of the most compelling evidence regarding the inadequacy of inputs in high-poverty schools is related to teachers.[8] Teachers in high-poverty schools do not compare favorably to teachers in low-poverty schools on a number of measures. Several of these measures were confirmed by the research synthesis in the previous section to be reliable indicators of teacher ability to affect student achievement. In other words, the adequacy of any group of teachers could fairly be assessed by their standing on these measures.

Schools serving large concentrations of poor and minority students are much more likely to be staffed by teachers teaching outside their field (NCTAF, 1996). Ingersoll's (1999) analysis of data from the 1993–94 Schools and Staffing Survey found that 13% of secondary classes in low-poverty schools (less than 10% poverty) are taught by teachers lacking certification in their field while 27% of secondary classes in high-poverty schools (more than 75% poverty) are taught by teachers without certification in their field. Students in high-poverty and high-minority schools are also more likely to be taught by teachers without a major or minor in the subject they are teaching (Ingersoll, 1999).

Teachers in high-minority and high-poverty schools are also less qualified than teachers in low-minority, low-poverty schools in terms of their performance on various standardized measures (Haycock, 2000). Kain and Singleton (1996) found that as the percentage of non-white students in Texas schools increased, the average teacher scores on a basic literacy test declined. Ferguson (1998) found similar patterns in Texas and Arkansas.

Evidence also suggests that schools with the largest number of poor and minority students have the most difficult time hiring qualified teachers and are more likely to resort to hiring unqualified teachers (Choy et al., 1993). In 1991, while 15% of schools overall reported having difficulty filling vacancies with qualified teachers, almost one-quarter of schools in central cities reported difficulty. Shortages of qualified teachers can translate into larger class sizes, lack of access to higher-level courses, more out-of-area teaching assignments, and poorer teaching (Darling-Hammond & Post, 2000).

A recent school adequacy court case, *The Campaign for Fiscal Equity v. The State of New York* (2001), illustrates how teacher qualifications can be used to support an argument of inadequacy. Plaintiffs made their case using evidence not only of sub-minimal student outcomes, but also of inadequate school resources. Among the school resources included in plaintiff testimony were several pertaining to teacher quality. With respect to out-of-field teaching assignments, 13.7% of New York City (NYC) teachers were not certified to teach in any subject they taught compared with 3.3% of teachers in the state. Likewise, 17% of NYC teachers taught more than 20% of their time in a subject for which they had no certification compared with a statewide average of 9%. NYC teachers also had a much higher failure rate on the state's certification exam than that seen across the rest of the state. NYC teachers were shown to be less experienced, on average, than teachers elsewhere in the state, with the least experienced faculties assigned to schools serving the highest concentrations of at-risk students. NYC schools also suffered from higher rates of teacher turnover and more severe shortages in specific fields than schools in the rest of the state. Finally, NYC teachers attended less competitive colleges, on average, than teachers in the rest of the state, and NYC schools hired less qualified graduates from any given institution than schools across the state. Based on these measures, the court found the quality of New York City's public school teachers—in the aggregate—to be inadequate (*CFE*, 187 Misc 2d).

THE CHALLENGES OF ATTRACTING AND KEEPING HIGH QUALITY TEACHERS IN URBAN SCHOOLS

Thus far, we have highlighted the most reliable indicators of teacher quality and provided evidence that urban schools are less likely to be staffed by quality teachers. Evidence also shows that high-poverty schools are less able to retain quality, or even qualified, teachers (Century Foundation, 2000; Haycock, 2000; Krei, 1998; NCES, 2000; NCTAF, 1996; Phillips et al., 1998). High rates of teacher turnover combined with a restricted pool of qualified applicants will arguably constrain any effort to improve the educational outcomes of urban schools.

Designing policies to improve the supply of quality teachers in urban schools requires not only knowledge about the teacher attributes that signal teacher quality, but some understanding of how and why teachers sort themselves across different kinds of schools, which types of schools experience the largest problems with teacher turnover, and why teachers choose to leave schools (or the teaching profession altogether). This section first presents the available evidence on such patterns and their implications for urban schools, and then provides a limited survey of suggested and recently implemented efforts to enhance teacher supply in hard-to-staff schools.

Factors Related to Teacher Recruitment and Retention With Implications for Urban Schools

Research that provides evidence on how teachers sort themselves across different kinds of schools indicates that teachers are not motivated exclusively or even primarily by compensation. Rather, teachers prefer to work in schools where they are most likely to experience feelings of efficacy and general job satisfaction. An examination of this research in the context of what is known about urban schooling suggests that teachers are less likely to experience these feelings in urban schools and, as a result, less likely to supply themselves to or remain in urban schools, especially those serving large groups of poor, minority and low-achieving students.

Analyses by Ferguson (1991) and Hanushek et al. (1999) of the relationship between student achievement and various district-level resource measures in Texas indicate that higher-quality teachers prefer to work with higher-achieving, non-minority and non-poor students. Ferguson (1991) found that teachers are attracted to higher salaries when all other factors (e.g., district SES and achievement) are equal and that the most highly-qualified teachers tend to supply themselves to districts with the fewest poor, minority and low-achieving students. Hanushek et al. (1999) found that among teachers with less than nine years' experience who move from one district to another, salaries do increase but not substantially. However, the average test score in the new district is higher and there are fewer poor and minority students. They further found that while teacher movement between schools or out of the profession was influenced by salary, the largest differences in teacher propensity to exit teaching or move were related to student achievement. Over 25% of teachers in schools in the bottom achievement quartile leave schools each year while in the top quartile less than 20% leave (Hanushek et al., 1999).

In their analysis of the relationship between state-level NAEP scores and state-resources, Grissmer et al. (2000) found that in those states where teachers reported receiving the highest levels of adequate resources for teaching, NAEP scores were higher. They also found higher NAEP scores in states with lower rates of teacher turnover (indicated by higher proportions of teachers with two or more years' experience), but were unable to detect a state-level relationship between teacher salary or degree and student achievement (Grissmer et al., 2000).

Based on his analyses, Ferguson (1991) suggests that improving the supply of quality teachers to districts serving large groups of poor, minority, and low-achieving students will require state-enforced salary differentials that provide teachers in these districts with higher pay. Grissmer et al. (2000) suggest that improving teachers' working conditions is the best method for realizing significant productivity gains from the current teaching force and caution that the current emphasis on salary hikes for teachers may come at the expense of providing teachers with the working conditions that could make them more productive. The types of improvements identified by Grissmer et al. (2000) include the provision of adequate resources for teaching, the expansion of public pre-kindergarten access to low-SES students, and targeted class size reductions in low-SES states.

National data on teacher turnover and supply patterns suggests that while Ferguson's (1991) proposal might have some short-term effect on teacher supply in hard-to-staff districts, Grissmer et al.'s (2000) could be essential for long-term changes in teacher supply patterns (and by implication, student achievement). The most current and comprehensive data on teacher supply/movement patterns and preferences comes from the national Schools and Staffing Survey (SASS) and its Teacher Follow-Up Survey (TFS).

Ingersoll's (2001a) analysis of data from the 1990–91 SASS and TFS administrations indicates that, as a group, urban public schools do not have especially high rates of turnover relative to other types of schools. However high-poverty public schools in all locales do have higher relative rates of teacher turnover. Among Ingersoll's (2001a) most relevant findings was that retirement-related turnover is relatively minor compared to that related to teacher job satisfaction and the pursuit of better jobs or careers. Thus the "teacher supply" problem is less a problem of an aging teacher population and more a problem of a dissatisfied teacher population, which is actually a demand problem (Ingersoll, 2001a). The implication, therefore, resembles Grissmer et al.'s (2000) recommendation: improving job satisfaction by improving working conditions for the current population of teachers is more important than attracting new teachers to the field.

According to Ingersoll's (2001a) analysis, among those teachers leaving schools or the profession, the most significant school-level factors associated with turnover include inadequate support from the administration, student discipline problems, limited faculty input in decision making, and, to a lesser extent, salary. Ingersoll (2001a) suggests that enhancing teacher supply requires decreasing demand by improving the organizational conditions that cause low retention. Efforts to improve organizational conditions should be directed toward four areas: (1) revising the compensation structure; (2) providing greater administrative support, especially for new teachers; (3) reducing the degree of conflict and strife within the school; and (4) increasing teacher input into and influence over school practices (Ingersoll, 2001a; see also Ingersoll, 1995, 2001b).

Results from an NCES (1997) analysis of TFS 1994–95 data also highlight the role of working conditions in teacher supply patterns and preferences. Among teachers who moved from one school to another in 1995 and reported dissatisfaction as the reason for moving, the top five reasons were inadequate support from administration; lack of support and recognition from administration; student discipline problems; poor student motivation to learn; and lack of influence over school practices and problems. This analysis also showed that teachers working in schools with large concentrations of minority students (over 50%) were almost twice as likely to move schools than teachers working in schools with small concentrations of minority students (less than 5%) (NCES, 1997). Interestingly, when teachers were asked to identify the policies most likely to affect retention, they identified the following (in order of preference): (1) increased salaries and benefits; (2) dealing more effectively with student discipline problems and making schools safer; and (3) reducing class size (NCES, 1997).

In sum, teacher turnover may not be a problem unique to urban schools, but it is a problem for high-poverty schools (Ingersoll, 2001a), which are more likely to be in urban settings (Lippman et al., 1996). Teacher turnover is frequently a response to unsatisfactory school-level working conditions (Ingersoll, 2001a; NCES, 1997) as well as inadequate compensation (Hanushek et al., 1999; Ingersoll, 2001a; NCES, 1997). And teachers prefer to work with higher-achieving students, who are most often white and non-poor (Ferguson, 1991; Hanushek et al., 1999). Unfortunately, urban schools are at a distinct disadvantage relative to all of these factors.

Urban schools report more classroom discipline problems, more weapons possessions, and more student pregnancies (Lippman et al., 1996). Teachers in urban schools also report having less control over the curriculum and fewer classroom resources than their suburban and rural counterparts (Lippman et al., 1996). In other words, urban school teachers work with students who present more classroom difficulties, who may require more or different teacher skills, and in an environment that is often marked by conflict and strife. As a further challenge, these teachers feel they do not have the resources or the support they need to do their jobs and little power to affect school policies or practices. It is reasonable to infer that these teachers are less likely to experience feelings of efficacy and general job satisfaction as a result. To make the issue more problematic, we have seen that as the proportion of poor students in a school rises, the level of per pupil expenditure goes down (NCES, 2000), a relationship that inevitably has a negative effect on teacher compensation in these schools. And while Ingersoll (2001a) did not find that urban schools as a group experience greater relative levels of teacher turnover, Lippman et al.'s (1996) analysis found that urban schools have more difficulty hiring teachers.

Taken together, the above research suggests that improved working conditions are a key component of any method to increase the supply of quality teachers to urban schools. Increased compensation and/or a compensation structure that rewards the teacher attributes most closely associated with student learning is another component of any policy effort to increase teacher supply in urban schools.

Ideally, adequacy-based reform will be a vehicle for improving the working conditions of urban schools (e.g., safety, instructional resources, class size), and student achievement will increase as a result. To the extent that working conditions improve and student achievement begins to increase, evidence suggests that recruiting and retaining high-quality teachers in these schools will become easier. Thus, the interrelated nature of the many components of adequacy has important advantages. Attention to teacher quality may lead to improvements in other areas shown to be important to teachers (e.g., instructional support, safety). Conversely, attention to these other issues may have the added effect of impacting teacher supply, even if such policies are not explicitly directed to this end.

Adequacy offers other potential advantages as well, especially as pertains to increased knowledge about a variety of important and problematic educational policy areas. As adequacy-based reforms are tried and evaluated, our understanding of the relationship between teacher characteristics and student achievement may be enhanced, as well as our knowledge of effective methods for recruiting and retaining quality teachers in low-performing schools.

Efforts to Enhance Teacher Quality in Urban Areas

Methods proposed to increase the supply of quality teachers to schools serving large concentrations of poor and/or minority students include offering subsidies for high-quality training, streamlining teacher selection processes and practicing proactive recruitment strategies, offering incentives for expanding knowledge sharing knowledge and skills, redesigning schools to support learning, and recruiting high quality school leaders (Darling-Hammond & Post, 2000).

A recent report issued by The Urban Teacher Collaborative (Fideler et al., 2000) identifies the wide range of efforts being made by urban school districts across the United States to recruit high quality teachers.[9] Of the 54 Great City School districts surveyed, 40 responded. All reported making special efforts to recruit teachers from colleges and universities. Over two-thirds (68%) of the districts made accommodations for uncertified or under-prepared teachers by waiving certain job/licensure requirements and/or offering alternative certification routes. More than one-third (35%) of the responding districts tried to attract teachers using incentives such as housing assistance, relocation benefits and/or loan forgiveness programs. Most of the districts (68%) also made effort to retain new teachers by offering induction and support programs. Among the least common strategies are salary bonuses for teachers able to realize high student achievement (8%), for teachers trained in high-need subject areas (25%), and for teachers who have earned certification from the National Board for Professional Teaching Standards (25%). The survey did not include any strategies related to improved working conditions in the schools.

Specific examples of the kinds of incentives being offered by states and urban districts in their attempt to improve the supply of quality teachers to hard-to-staff schools are as follows:

- Florida enacted a teacher bonus program in 2000 designed to retain highly qualified teachers in alternative and low-performing schools (Sandham, *Education Week*, 11/18/00). Bonuses from $1,000 to $3,000 were to be given to teachers who had improved achievement in alternative schools and in low-performing schools graded D or F in the state's accountability system. Beyond these criteria issued by the legislature, the districts were left to determine which teachers were to receive the bonuses. In the end, more teachers were identified than funds were available to cover. And teacher morale suffered as teachers were not confident in the various processes districts used to identify deserving teachers (Sandham, *Education Week*, 11/18/2000).
- The Cincinnati Public Schools initiated a home ownership program that provides loans to teachers of up to $250,000 at up to one-quarter point below the fixed market rates (Mrozowski, *Cincinnati Enquirer*, 7/22/01). Other Ohio districts have offered staff day care centers at school sites, job-sharing programs, mentoring programs and raises to teachers' base salaries in an effort to enhance teacher supply in low-performing areas (Mrozowski, *Cincinnati Enquirer*, 7/22/01).
- In the 1997–98 school year, Rochester, NY teachers ratified an agreement providing an incentive of $1,500 for teachers to voluntarily accept assignments in low-performing schools in the district (Krei, 1998).
- In the Charlotte-Mecklenburg schools, a group of teachers began the discussion of a proposal to place clusters of nationally certified teachers in disadvantaged middle schools (Krei, 1998).

According to Krei (1998) teacher allocation policies in many urban school districts are to blame for the restricted pools of qualified applicants and high rates of teacher turnover. Krei (1998) suggests, like Ferguson

(1991), that the simple solution is to ensure that some of the best, most highly qualified teachers in the districts are placed in the lowest-performing schools.

Perhaps the better arguments are for changes to the entire teacher compensation system so that the skills and attributes most related to learning are rewarded. One variant on this strategy is increased compensation for National Board of Professional Teaching Standards (NBPTS) certified teachers. There is limited evidence that these teachers are more effective teachers, as measured by observation of these teachers and evaluation of student work samples (Blair, *Education Week*, 10/25/00). Another option is for districts to create templates of the teacher skills and attributes research indicates are most associated with student learning and then align them with evaluation and compensation systems. The problem with this method is that there is always some degree of subjectivity involved, and historically, teachers do not respond well to such attempts to tie observational evaluations of their teaching practices to compensation. Finally, there have been efforts to link teacher compensation directly to student achievement (e.g., Tennessee Value-Added). But the relationship between teachers and student achievement is mediated by so many other factors (over which teachers have little or no control) and extant measurements are so crude that teachers have reasonable objections to such systems.

Our review suggests that while efforts to identify teacher practices most closely linked to student achievement and compensate teachers accordingly are certainly noteworthy and important steps, they are not sufficient. Teachers want to feel that they are not only capable of facilitating higher levels of student achievement, but supported in doing so and given a voice in deciding which practices are most likely to lead to higher levels of student achievement. And they want to engage in this work in safe, pleasant environments where the resources necessary to be successful are available. Therefore, the most successful efforts to improve the supply of teachers to urban schools, especially those serving large groups of poor, minority and low-achieving students, will be comprehensive efforts that address both individual and school-level factors associated with teacher turnover—namely, that provide competitive compensation and improved working conditions.

CONCLUSION

Adequacy-based school finance reform departs from previous school reform efforts largely because it seeks to explicitly link educational goals with educational programs and ensure that the resources necessary to meet educational goals are provided. It holds the standards for achievement steady while acknowledging that resources will have to vary in relation to student, school and district capacity to meet standards. This is a notable step in its own right, and will hopefully lead to the enhancement of educational services in urban schools that reformers have long sought.

But adequacy-based reform promises to make other contributions as well. Namely, as states seek to ensure that all students in all areas receive equal access to an adequate education, they will necessarily generate greater knowledge about the quantity and quality of resources most likely to ensure such access, as well as about how resources must vary across student groups and locales.

Of all the inputs related to student learning, the contribution made by teachers is held to be the most important, and research on the teacher qualities and qualifications most related to teacher performance is improving. Available research suggests four reliable indicators of teacher ability to facilitate student achievement: certification in the assigned teaching area; subject area and pedagogical coursework in the assigned teaching area; verbal ability; and at least five years' teaching experience. Evidence also indicates that teachers in urban schools are less likely to do well on these indicators. For now, efforts to improve the quality of teachers in urban schools should be directed toward increasing the supply of teachers with these attributes. To the extent that adequacy-based reform generates new and more refined knowledge of the relationship between teacher characteristics and student achievement, all schools will benefit, but urban schools stand to benefit the most.

Urban schools, especially those serving large groups of poor and minority students, have a harder time recruiting and retaining high-quality teachers. Improving the supply of quality teachers in these schools is problematic because many of the factors associated with teacher turnover are present in urban schools; namely urban schools are more likely to have lower-achieving students on average, more poor and minority students, poorer working conditions, and relatively fewer resources. Therefore, affecting the supply of teachers to urban schools requires addressing a range of factors, several of which also stand to benefit student achievement in general.

While policies directed at equalizing the distribution of student traits across schools are politically untenable, policies that aim to equalize the distribution of outcomes across schools are politically salient and potentially effective—especially to the extent that states are prepared to provide all students an adequate level of resources to meet state standards. To the extent that urban schools receive adequate resources to meet student need and student achievement in these schools rises as a result, increasing the supply of quality teachers in urban schools may occur as a natural consequence.

In the end, the landscape of available evidence suggests that a new compensation structure that rewards teachers for taking on the most challenging assignments is warranted but not sufficient. For adequacy in urban school outcomes and inputs, especially as pertains to teacher quality, to be achieved, comprehensive efforts to provide all students the support and resources they need to have an equal opportunity to receive an adequate education will be necessary.

NOTES

1. See Wise (1972) for a description of the wide range of concepts of equal educational opportunity that have been observed.
2. In the case of Kentucky, the entire educational system was ruled constitutionally inadequate. *Rose v. Council for Better Education, Inc.* 790 SW 2nd 186 (Ky, 1989).
3. This section draws from an extensive literature review of the impact of teacher quality on teacher performance supported by the Economic Policy Institute. For the full review, see Rice (2002).
4. Though the variability in quality remains considerable. This review describes study designs and gives greater weight to more rigorous designs in the conclusions drawn.
5. Of course, the value of any test as an indicator of teacher quality depends on the predictive validity of the test. In other words, some tests are more reflective of the kinds of skills and knowledge that teachers need to do their jobs well.
6. Concentrated poverty at the school level is most commonly indicated as 40% or more of the student population being eligible for free or reduced price lunch (Lippman et al., 1996). FRPL eligibility is a somewhat problematic indicator of poverty, however, because it includes a large group of students, many of whom may not be nearly as "at-risk" as common understandings of poverty might imply. For example, to be eligible for reduced price lunch, a student may come from a family with income at 185% of the poverty line. To be eligible for free lunch, a student may come from a family whose income is 130% of the poverty line. It may be that the needs (therefore the level and intensity of educational resources) of a student who is living at 185% of the poverty line are different than the needs of a student living at 130% of the poverty line, or significantly below the poverty line. Furthermore, data are not disaggregated to show the percentage of students receiving free versus reduced price lunch at the school level. These are important questions for future research to address insofar as they can help direct the most cost-effective allocation of funds. However, it is sufficient for most purposes to know that when a school has a concentration of students receiving subsidized lunches above 40%, all students in the school are exposed to another layer of risk for academic failure.
7. Certainly this is not true for all students attending urban schools and the degree of risk varies along a number of lines. There are successful urban schools, even successful urban schools with large concentrations of poor or

otherwise at-risk students. But such schools are not the norm; as such, the policy problem is how to create the conditions for successful or adequate education in all urban schools. The problem to be addressed here is the problem of attracting teachers to urban schools. There are a number of reasons why it is harder to attract teachers to such schools; however, it is important to note that a portion of the problem, perhaps a significant portion of the problem, is that teaching in urban schools is problematized by the fact that such schools are not only likely to have more students with special needs, but that such schools are more likely to have large enough concentrations of such students that all students are at greater risk. This implies that the concentration of poverty at the school level somehow mitigates against effective schooling, or the creation of school environments that are conducive to successful teaching and learning.

8. Inadequacy can be demonstrated here in a number of ways: (1) relative to schools in other locations; (2) relative to the needs of the students in urban schools; and (3) relative to teacher attributes that extant research demonstrates are most likely associated with the provision of an adequate education as measured by student outcomes.
9. Founded in 1994, The Urban Teacher Collaborative is comprised of three groups: Recruiting New Teachers, Inc., The Council of the Great City Schools, and The Council of the Great City Colleges of Education.

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CHAPTER 9

USING STUDENT LEVEL DATA TO MEASURE SCHOOL FINANCE ADEQUACY

An Exploratory Analysis

**Lawrence O. Picus, Jacquelyn McCroskey, Ed Robillard,
Jane Yoo, and Lynne Marsenich**

INTRODUCTION

Public School Finance today has begun focusing closely on the issue of adequacy, or how much money is needed to provide an education sufficient for students to perform at high levels (Clune, 1994). A number of states have begun efforts to determine the level of resources necessary to provide an adequate education to all children. What is clear from all of these efforts to date is that ascertaining these costs for each child is difficult given the current level of data available. While there have been great strides in recent years in understanding school level data (see, e.g., Goertz & Stiefel, 1998), it is not clear that even this level of detail will provide what is

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needed. This chapter offers an alternative approach, looking at individual student resources, both within schools and in the neighborhoods in which schools are located.

Understanding how much we spend—and how it is spent—to educate and care for the children in our local communities is an important policy issue central to discussions about the allocation and use of public resources. This exploratory study links two different methods of accounting for public expenditures in order to examine the total public resources spent on children and families in a specific geographic community. It overlays two distinct traditions of analysis in order to estimate the total resources expended in a specific community and to begin to link those resources with outcomes for children.

In the first tradition, *school finance*, analysts have long studied school district spending patterns and recently have begun to look at school level resource distribution. However, to date researchers have had little success in relating the allocation and use of educational resources to outcomes for individual students. Resource use patterns are remarkably similar at the district level and appear to be more alike than different at the school level (Picus, 1993a, b). Even brief observations in different communities, however, highlight substantial differences in the school- and community-based services accessible to children and their families.

In the second tradition, *children's budgets* have been used to provide an overview of spending on a large number of social and health service programs, Most of these programs are provided by state, county and municipal governments which carry responsibility for protecting the health and well-being of their residents. Other services, which may also be provided to children and families through nonprofit, community-based, civic or religious organizations, may be included in some children's budgets.

School Finance

The principal focus of school finance in the past has been on elimination of fiscal disparities among school districts. Whether the goal was to eliminate differences in per-pupil spending, or to establish greater taxpayer equity, most school finance research has focused on ways to measure equity and on treatments for differences in the fiscal capacity of school districts. While there is still much to be done on this front, school finance today must also accommodate a number of new issues related to: whether or not spending levels are adequate to meet the needs of our children; how educational resources are allocated and used; and how funding levels are linked to student outcomes (Odden & Picus, 2000). In this chapter, we suggest that to fully understand each of these issues, school finance researchers will need to collect resource allocation data at the student level.

In recent years, considerable attention has been devoted to the collection of school level fiscal data. Ohio, Texas, and Florida are the three states with the most experience in collecting student level data. These efforts seem motivated by both the growing trend toward more school site decision-making, and the growing demand for accountability for student performance. In the states with the most experience in school level data collection, one constant has been that gathering of these data is expensive and difficult. Often, once collected, the data remain relatively unused. Moreover, to the extent that understanding how resources are linked to student outcomes, it seems probable that school level variables will suffer from the same lack of specificity that has plagued the use of district level expenditure variables in research on this topic. For that reason, we feel it important to consider the collection of student level resource allocation variables. This effort is not without its difficulties and expense. In fact, it may provide more information than school districts really need for efficient fiscal operations. However, absent more knowledge of what is to be learned from student level data collections, we feel initial efforts in this direction are warranted.

Children's Budgets

Because there are so many different public and private programs serving any one community, it is extremely difficult to track funding across institutions and categorical funding streams. Unlike schools, where districts are responsible for channeling funding from multiple funding streams in a coordinated allocation process reflected in a unified budget document, there is no single entity responsible for allocating and tracking expenditures on social and health services. Funds for human services are allocated according to prescribed funding categories (i.e., child care, juvenile justice, mental health, welfare, etc.), and these categorical funding streams are generally allocated separately and administered by different departments and institutions at different levels of government. A children's budget can be used by child advocates to aggregate the many different categorical funding streams that support the child and family services "system," providing a glimpse of the whole for the public and for decision-makers used to thinking about one program or one department at a time.

Our Approach

This study includes school finance data from the Los Angeles Unified School District (LAUSD) along with data from the Children's Budget of Los Angeles County Government (McCroskey & Yoo 1999) to derive estimates of total public expenditures on services for children and families in the community around the USC campus. Elsewhere, Picus (2000, 2001) and Picus and Peternick (2000) argue that collection of student level fiscal data will improve our knowledge in four school finance research areas. They are:

- Equity;
- Adequacy;
- Accountability;
- Productivity.

Equity

Although issues of equity have been the principal focus of school finance since the turn of the century (see, e.g., Odden & Picus, 2000), school finance research will continue to look at issues of equity well into the foreseeable future. One area gaining more attention is within district spending disparities.

Hertert (1996) demonstrated that even in a state with relatively equal per-pupil spending (California), there are substantial differences in per-pupil spending among schools within a district and across schools among districts. She also showed that substantial differences exist in the types of resources available to children, finding a considerable disparity in the pupil/teacher ratio for teachers of high-level math and science courses. Clearly those students in schools with a lower ratio (fewer students per teacher) have greater access to teaching resources for those subjects.

The differences Hertert identifies across schools are an important concern for school finance researchers. Even if we make progress in improving the equity of district level finances, if differences continue to exist among schools, our ability to improve student learning for all may be compromised. Understanding the extent to which differences in spending, and educational resources are unevenly distributed among schools both within districts and across schools among districts within a state is another critical issue for future school finance research.

While school level data would improve our understanding of this considerably, anyone who has been in a school recently can't miss the fact that even within individual classrooms, considerable differences in the resources available for each child exist. For example, some children, as part of a special education inclusion program, may have their own teaching aide for all or part of the day. Other children may be taken from the classroom for a portion of some or all days each week for special instruction. This model is common in Title I programs, and is a critical part of the Reading Recovery program. These actions are clearly intended to improve the "vertical equity" in schools, something school finance research has had limited success measuring to date. Moreover, this shows that substantial differences in the resources available to individual children probably do exist.

Adequacy

The 1990s saw resurgence in school finance litigation. Since 1989, a total of 21 cases have found their way to the highest court in their respective state. In 12 of those, the court decided in favor of the plaintiffs (see, Odden & Picus, 2000 and related web site http://www.mhhe.com/schoolfinance). Beginning with the 1989 decision in Kentucky (*Rose v. Council for Better Education, Inc., Ky,* No. 88-SC-804-TG), courts have been more willing to overthrow the existing funding system, define remedies and establish concrete requirements for constitutional remedy. In many instances, these decisions have focused on an alternative concept in school finance—adequacy.

In the past, school finance cases were brought on the more narrow grounds of funding equity for students, or taxpayer equity through remedies such as fiscal neutrality. Adequacy cases argue that it is the responsibility of the state to provide an "adequate" level of resources to insure each child receives a satisfactory education. As envisioned by William Clune (1994), adequacy shifts the focus of school finance reform from inputs to an emphasis on high minimum outcomes. Adequacy models focus on the resources needed to provide students with the education they need to attain high standards. It seems clear that the availability of student level resource data would improve the accuracy of estimates of the costs of providing students with an adequate education.

Accountability

Holding schools accountable for the performance of their students has become one of the staples of education policy in the 1990s. Policy makers talk about giving schools the funds they need and holding them accountable for student performance. While this rhetoric is popular, it is a long way from a state actually relaxing its control over the basic accounting functions they currently require of school districts, particularly for specific grant programs. This is understandable as any legislator who appropriates billions of dollars for schools only to find that some have "misused" those resources will want to have some redress with local officials. Hence, we have been slow to remove restrictive and outdated fiscal controls on schools.

Some progress has been made in this direction through so-called "market based" approaches to school reform or reorganization. Specifically, programs that support site-based management, school choice, vouchers and charter schools offer local school officials the opportunity to have more control over the allocation and use of the revenues they receive. The question facing school finance researchers is, do local educators take advantage of this new flexibility and use their resources differently? If they do, does it make a difference in student outcomes? Both questions are critical components of future school finance research. We also need to know if different organizational structures lead to greater gains in student learning than others and we need a better understanding of the relationship between organizational structure, resource use and student achievement. Armed with this information, it may be possible to hold schools accountable for the performance of their students.

Productivity

We are a long way from understanding the link between money and student outcomes. Despite hundreds of studies and years of debate the question of how money matters is still hotly debated. What we need is better fiscal data. Today it is possible to get detailed student level demographic and performance data. Often we can only link it to district-wide fiscal data. If we better understood how much was spent at the school, or ideally at the student level, it will hopefully be possible to more fully understand the relationship between money and achievement. Additionally, it is also important to understand what resources money buys at the school. For example, it may be more important to know about the characteristics of individual teachers than how much they earn, or even how many students are in their classes.

Children's Budgets

In 1984, the Los Angeles Children's Roundtable began an intensive two-year study of county expenditures on behalf of children and families. Their 1986 report, *The Children's Budget of Los Angeles County Government*, analyzed county expenditures for children using data from the 1980–85 (Los Angeles Roundtable for Children, 1986; McCroskey, 1989). The genesis of the study was the need for more information about the distribution of funds, the sources of these funds and changes in funding patterns over time. In 1992 the Los Angeles County Children's Planning Council (CPC) was established largely in response to the Roundtable's 1986 call for a "practical planning mechanism for children's services."

One of the key issues then, as now, was how to integrate many different data sources to produce timely and strategic information to support proactive planning for children and families. Information collected by county government staff was often not accessible to the public, or even to staff members, in useful formats. The difficulties of integrating information from 24 departments serving children and families continues to be one of the key roadblocks to effective countywide planning and evaluation of services.

When the Roundtable first proposed analysis of county expenditures on services for children and families, the children's budget idea was relatively new. Although there had been a few reports analyzing expenditures at the state level, the Roundtable found no other such studies at the county level (Georgia Appropriations for Children Committee, 1983; Grubb & Heilbrun, 1982; Hugi, 1983). Fortunately, the two county Chief Administrative Officers (CAO) who served between 1984 and 1986, and the three who have followed since that time, have all supported the children's budget process and provided staff assistance in collecting and analyzing budget data. Since that time, others have adopted similar processes (Coleman Advocates for Children and Youth, 1989; Fellmuth, 1999) and the Children's Defense Fund has continued to publish an annual analysis of federal spending for children (Children's Defense Fund).

While the format developed for capturing budget data has changed somewhat over the years, the process used to develop the Los Angeles children's budget has remained much the same. Departments with programs serving children and families provide budget data on each program to CAO analysts who validate and tabulate the data. Department directors review drafts and the CPC helps to develop conclusions and recommendations. (In 1992, responsibility for advising CAO staff working on the children's budget was moved from the Roundtable to the CPC.) The fact that data have been collected continuously for almost twenty years (with only a few gaps in years) means that this the longest running children's budget in the country).

One of the biggest challenges is the timing of data collection. Budget figures can be *actual* (tabulated after the close of the fiscal year), *estimated* (accounts kept during the fiscal year), or *projected* (estimates for the upcoming year). Obviously, even the most careful projections can change dramatically during the year depending on a number of factors. During some years, data were reported at different points during the budget process, resulting in slightly different figures. Changes in departmental management over time and increased use of program budgeting have also brought changes in the ways that departments define their programs. Despite some discrepancies, the data still provide valuable insights into patterns and trends of county funding.

One of the key aspects of analysis is aggregation of the many programs reported by county departments into seven functional areas—income support, protective services, health, mental health, juvenile justice, child care and prevention.

STUDY METHODOLOGY

Examination of School Budgets

This section describes the approach we used to estimate public school expenditures for each student in one urban high school in Los Angeles. We begin with a description of the school itself, follow with a detailed discussion of our methodology and conclude with the results of our analysis. In the conclusions to this article we discuss the strengths and weaknesses of our method and compare it to the use of national NCES data for the same purpose as has been suggested elsewhere (see, Picus, 2000, 2001; Picus & Peternick, 2000).

Description of the High School

The school site used for this study is a large, comprehensive, urban, year-round, high school located in the Los Angeles Unified School District. The population of the school fluctuates between 3,500 and 4,000 students. Students attend school as part of one of three enrollment tracks (designated A, B, and C). Students are assigned tracks primarily by zip code or program. The school offers a number of special and magnet programs which operate on one of the three tracks. Thus, students accepted in the Graphic Arts Academy enroll in the B Track. Students not enrolled in any particular program are assigned to a track by zip code. As students leave and new students enter the school, the registration office policy for assigning new students to a track is based on maintaining equal numbers of students in each track.

Eighty percent of the students in the school are Latino, and the remaining 20% are African-American. Approximately half of the Latino population is of Mexican decent with the other half from Central American and South American countries. This later group includes many recent immigrants. The transiency rate is more than 20% per year. More than 90% of the school's students receive free and reduced price lunch each day. The school operates at is enrollment capacity and more than 200 students in the school's attendance area were bused to other schools at the beginning of the 1999–2000 school year.

The school utilizes block scheduling with classes meeting for two hours every other day Tuesday through Friday. On Monday, all six periods meet for one hour. Athletic teams meet as a physical education class either 5th or 6th period in addition to their after school time.

The school year starts in the beginning of July and ends the last week in June. The only time the school closes completely is during the last week in December. Each track meets for four months then takes two months off.

There are eight academies in the school. The academies offer instruction in specialized areas such as graphic arts. Approximately one-third of the students are enrolled in one of these eight academies. The school is governed using a school-based management (SBM) model. The school's SBM committee selected the principal along with most of the five assistant principals at the site. The school recently received the California Distinguished Schools award and is a finalist to become a New American High School.

Conceptual Framework and Method

To understand how resources are allocated to students, the school's spending was divided into three categories. The first was those expenditures that could be directly allocated to individual students. Direct student expenditures included the dropout prevention program, social workers, attendance counselor and health clinic costs. These expenditures were assigned directly to individual students on a per pupil basis. Total direct student costs amounted to $430,714 or 2.2% of the total school budget of $19,307,808.

The second step was to identify the costs associated with each class offering in the school. To do this, we relied on the school's master calendar to assign teachers and students to each class. That done, we determined the cost of compensation for each teacher and divided that figure by the number of classes a teacher taught. If an individual had administrative responsibilities for some portion of the day, the cost of that time was allocated to the school's indirect costs as described below. Departmental costs were also allocated to each teacher and then to each teacher's individual classes. Thus, if a teacher taught two language arts classes, and three social studies classes, the individual period cost of the social studies department would be allocated to the three social studies classes and the individual period costs of language arts department would be allocated to the two language arts classes. Classes that were part of academies that received additional funding shared equally in that funding. Total direct classroom costs amounted to $10,595,450 or 54.9% of the school's total budget.

Finally, all other costs in the school were allocated on a per student basis. These costs included administrators, student support services, administrative support, supplies, utilities, custodial, maintenance and operations, food services and transportation. These costs amounted to $8,281,644 or 42.9% of the total budget for 1999–2000.

Direct student costs and per-pupil indirect costs were assigned to each student. Then, the cost of one student in each of the identified classes was estimated. The total costs for each student was the sum of the direct student costs allocated to that individual, that student's equal share of the indirect or school level costs, plus the costs associated with one student in each of the classes in which the student was enrolled. The figures reported in this article represent expenditure estimates based on the school's budget for 1999–2000 and are subject to revision at the end of the school year. We chose to use 1999–2000 budget data because data from the student information system for the previous year (for which we had actual expenditure data) was not available.

Data

A student database was created using the school's student information system (SIS). The data were placed in the database on a date in November 1999 when all three tracks were present on campus. Approximately 3800 student records were downloaded to our database. The variables captured included: student name, birthday, unique record number, grade, track, ethnicity code, and the course numbers in which the student was enrolled for each of the six periods of each day. We checked the database for duplicate students and for students not enrolled in any classes. This reduced our sample to 3,489 students.

The data on classes offered and their size was obtained from another district resource. There were approximately 1,200 different classes offered on the three tracks. The information available on this report also included what type of class (i.e., algebra IA, world history) and what type of program (magnet, Humanitas, etc.) each class represented. Individual class data were generated on the same day in November 1999.

We assumed, for the purposes of this study that students would enroll in the same classes during the second semester of the school year. In the long run, we would prefer to estimate costs based on actual enrollments in each semester. However, issues of timing and the need to wait until well into the year 2000 to get all of the data necessary required that initially we make this assumption. We also assumed that the teacher force would remain constant throughout the year and that they would continue to teach the same classes each semester. Since teacher turnover has been less than 3% so far this year, the assumption is not to far from actual practice. While this assumption does not reflect the reality of any school, it seems reasonable for a first approximation of resource allocation and use. In the future, we hope to be able to compare totals based on students' actual enrollments throughout the year.

To determine class level expenditures, we used the school and district personnel systems to determine actual teacher salary and benefits. These were allocated across the classes taught by each teacher on an FTE basis. We also determined the costs of assistant teachers (where they were utilized), departmental costs, academy costs, and special program costs. These were allocated to individual classes as appropriate to determine how much was spent on each individual class offered by the high school. The cost for each class was then divided by the number of students in that class to reach a per-pupil expenditure figure.

The last category of expenditures is the costs associated with running the school generally. These include expenditures for administrators, instructional support staff such as counselors and deans, administrative support staff such as security and school police, teacher substitutes, materials and supplies, utilities, custodial staff and supplies, maintenance, student cafeteria, transportation and costs associated with the district office. The total of these costs were then divided by the number of students to arrive at a constant per pupil figure of $2,374 per pupil. These costs are summarized in Table 1.

Table 1. Summary of School Level Costs Allocated on a Per-Pupil Basis

Category	*Amount ($)*	*Amount Per pupil ($)*	*Percent of Total (%)*
Administrators	512,182	147	2.65
Student Support	1,670,805	479	8.65
Administrative Support	1,223,257	351	6.34
Substitutes	221,880	64	1.15
Supplies	1,270,585	364	6.58
Utilities	170,369	49	0.88
Custodial	485,407	139	2.51
Maintenance	410,907	118	2.13
Student Cafeteria	1,256,400	360	6.51
Transportation	191,000	55	0.99
District Office	868,852	249	4.50
Total	8,281,644	2,374	42.89[a]

Note [a] Figure represents percentage of total school expenditures, not expenditures for school level only.

Source: Computed from school records

Children's Budget Methodology

Geographic Area Studied

Because this study combines data from sources that use different definitions, the authors have tried to reach reasonable compromises for the purposes of estimation. School data is based on the attendance areas of the Family of Five schools, those closest to USC's main campus and designated for special partnerships with the university. These five schools are part of the Manual Arts High School cluster—an administrative division used until recently by the LAUSD to designate groups of high schools and their feeder middle and elementary schools. The LAUSD began in July 2000 to move to a system of 11 regional districts (instead of 27 clusters) for administrative purposes. This study, however, uses the old cluster boundaries because they are closer to this small group of schools and more closely affiliated with the zip code areas commonly used by county departments.

For the purposes of this study, the authors conceived of the "community" surrounding the Family of Five schools as the five zip code areas that made up the Manual Arts High School cluster attendance area. All five zip codes—90007, 90018, 90037, 90044, and 90062—fall in the South area of the county designated as SPA 6.

Estimation of Expenditures by County Departments

Five county departments account for most of county funding in the children's budget, and provide the majority of direct services to children and families. These are:

1. The Department of Public Social Services (DPSS) which provides "welfare" or the CalWORKs program (California's version of Temporary Assistance to Needy Families, the Federal welfare reform program), Medi-Cal (California's version of Medicare, Federal health insurance for poor families), food stamps and some child care services.
2. The Department of Children and Family Services (DCFS) which provides services for abused and neglected children and their families.
3. The Department of Health Services (DHS) which provides well child care, as well as outpatient and inpatient treatment through a system of county-funded clinics and hospitals.
4. The Department of Mental Health (DMH) which provides prevention and treatment services to children through its Children and Youth Services Bureau.
5. The Department of Probation, which provides incarceration and long-term supervision for juvenile delinquents.

For the purposes of this study, data on the number of child and family clients seen in each of the five zip codes was obtained from either the Los Angeles County Service Planning Area Databook (United Way & Children's Planning Council, 1999a) or from department sources. The percentage of annual funding estimated to have been allocated to serving these clients was derived by comparing total clients served by each department countywide to clients in the USC area. The percentage derived was used to calculate the estimated proportion of funding from each of the five departments allocated to serving clients living in the USC area. Funding for programs in other departments providing services to families and children were aggregated and divided by 5% (the average percentage of clients served from the five zip codes).

This method of estimation has a number of limitations including the following: (1) incorrect zip codes may have been recorded by program or data entry staff; (2) families who reported living in the area may have moved or reported incorrectly; and (3) aggregating more expensive services with less expensive ones may lead to under- or overestimation. The biggest limitation is that we do not know whether the children of the families served by county government programs sent their children to public schools in the area. Despite these limitations, however, this method appears to provide a reasonable estimation of the dollars spent on health and social services for children and families living in the USC area.

Estimates of Expenditures by City Departments and Community-based Agencies

The City of Los Angeles invests a much smaller proportion of its resources than the County on children and family services—almost 5% as compared to about 25%. For purposes of this study, a single estimate of City expenditures (across departments) was derived based on the most recent children's budget for the City.[1] The percentage of children living in the five zip codes was calculated using the City data book (United Way and City of Los Angeles, 1999).

Data on expenditures by not-for-profit and community-based agencies is even more difficult to calculate. A ballpark figure was derived by examining at the Roundtable's 1989 and 1991 reports on private sector services for children and families (Los Angeles Roundtable for Children, 1989; McCroskey, 1991). At that time, the Roundtable was able to document about $1 billion in expenditures countywide by private agencies on children and families. We assumed that child and family-related services in the USC area accounted for about 5% of total private sector expenditures (the same proportion of those services as they do for county services). One of the major limitations of this method is that it assumes no change in overall funding over the last decade, an assumption that probably underestimates current resources. Given that many factors affect availability of private sector services and that there is no trend data on changes in these service patterns over time, we chose to err on the side of underestimating private sector expenditures.

FINDINGS

Description of the USC Community Area

As noted above there are a number of ways of defining the USC community, but the primary methods used in this study are:

1. The attendance areas of the Family of Five schools (school budget data).
2. The five zip code areas that make up the Manual Arts High School cluster (health and human service data).

There were 263,058 residents in the five zip code area in 1998 or about 3% of the population of the County and 7% of the City. Of these, 59% were Latino, 38% African American, 3% White and less than 1% Asian Pacific Islander and American Indian. According to the 1990 census, 38% of families with children were headed by single parents, and more than 30% were living in families with incomes under the poverty level. About 13% of adults reported that they were unemployed.

In 1998, there were 90,218 children living in the area, 31% of whom were less than five years old, 29% were between five and nine years old and 40% were more than ten years old. The ethnic breakdown of children was similar to that of the population as a whole, but there were more Latino children (70%) and fewer African American (27%) and White children (1%). The total number of students enrolled in the Manual Arts cluster schools was 21,290 in 1997–8, 12,154 (or 57%) of whom were in elementary schools and 9,136 (or 43%) were in secondary schools.

Much of the community is poor with little residential stability. Many immigrant families move in and out of the area rapidly looking for better places to live, and children may attend a number of schools before their families settle down. There has historically been considerable tension between African American and Latino groups, but the situation may be improving over time as people adjust to recent demographic changes. The data suggest a community greatly in need of health and social services, as reflected in the rates of utilization of county services (which are somewhat higher than the percentage of the population living in the area). The number of private agencies that are accessible locally to residents is, however, smaller than what might be expected in other parts of the county (Wolch & Walsh, 1998). Data on utilization of City services is not available for this area.

Estimated Expenditures of County Government

The residents of the USC area accounted for the following percentages of county department services:

- 7.6% of children served by DCFS in 1997;
- 5% of children served by the Children and Youth Services Branch of DMH in 1999–2000;
- 5% of public assistance recipients served by DPSS in the month of January 1998;
- 4% of Probation youth;
- 6.6% of DHS Medi-Cal eligible clients (a proxy measure for families with children using DHS services.

An average number of 5% was used to calculate estimated expenditures by other county departments. Table 2 summarizes the estimated county expenditures. Using the children's budget figures for 1997–97, the estimated total spent by county departments on services for families and children in the USC area was more than $223 million.

Table 2. Estimated County Department Expenditures in USC Area

County Department	*Estimated County Expenditures in USC Area ($)*
Children and Family Services	73,979,521
Public and Social Services	110,447,500
Mental Health	5,657,841
Probation	8,258,051
Health Services	19,124,031
Other Child and Family Programs	6,416,956
Total Estimated County Expenditures	223,883,900

Estimated Expenditures of the City of Los Angeles

According to 1998 figures, the number of children and youth living in the USC area was 121,515 or 3.6% of the city's child and youth population (ages 0–24). Using the children's budget figures of 1994, the estimated expenditures by the City of Los Angeles on services for families and children in the USC area were more than $15 million. This is summarized in Table 3.

Table 3. Estimated Expenditures by the City of Los Angeles

Description	*Amount*
Percent of child residents of the city living in the USC area	3.6 %
Total City expenditures on children and families	$427,862,635
3.6 Percent of children's budget or estimated expenditures by City Departments	$15,403,054

Source: Children's budget of 1994 for the City:

Estimated Expenditures of Private Sector Agencies

Using the 1991 Roundtable study of private sector expenditures for children and families, private sector expenditures totaled $975,336,000 or almost $1 billion countywide. If the USC area accounts for about 5% of expenditures by the private sector, then the estimated expenditures were almost $50 million.

Estimated Expenditures of the Los Angeles Unified School District

The average budgeted per-pupil expenditure at the high school we studied was $5,534 for the 1999–2000 school year. Since this amount includes an estimate of district office expenditures, it is below the statewide average of $6,269. We expect this is the result of both less experienced teachers (with lower average salaries) and larger class sizes at the high school we studied.

Table 4 displays summary statistics for per-pupil expenditures for each of the 3,489 students in our sample. The table shows that per pupil expenditures ranged from a low of $3,615 to a high of $16,734, a range of more than $13,000 per pupil. However, the restricted range—representing the difference between the student at the 95th percentile and the student at the 5th percentile is considerably smaller, only $2,907. The standard devia-

Table 4. Summary Statistics for Per-Pupil Expenditures

Statistic	*Amount*
Average -per-pupil expenditures ($)	5,534
Standard Deviation ($)	1,075
Minimum ($)	3,615
Maximum ($)	16,734
Range	13,059
Median	5,265
Restricted Range, 95th – 5th ($)	2,907
Gini Coefficient	0.091

Source: Computed from school data

tion in per-pupil expenditures is $1,075. Finally, the Gini coefficient, which measures the equity of the distribution of resources, is a relatively good 0.0901. This suggests that even though there are a few students for whom tremendous levels of resources are being devoted, for the most part, students have roughly equal access to educational dollars at this high school.

We investigated some of the potential sources of variation in expenditures per pupil across the school. We found that there were slight differences by track and grade as represented in Table 5. The table shows that average expenditures are lower than average for 9th and 10th graders and higher than average for 11th and 12th graders. Note also the substantial drop off in the number of students in the 11th and 12th grades. This dropoff is most likely the reason for the increased per-pupil costs, there being fewer students to put in some, if not most, of the classes that are aimed at the older students. This would lead to higher average per-pupil expenditures. Analysis of expenditures by track shows relatively little variation, with Track C having expenditures somewhat above the school average and Tracks A and B somewhat below. This may be a function of teacher experience by track.

As described above, the high school has six academies and programs that provide specialized educational programs to students. Four of them have per-pupil expenditures higher than the school average, while the other two are somewhat below the average. The Magnet program spends $5,276 per pupil and the Humanitas program some $5,370 per pupil. The remaining four academies, NAI, Graphic Arts, ISA and Perkins all spend somewhat more than the school-wide average.

Table 5. Expenditures Per-Pupil by Grade and Track

Measure		*Number of Students*	*Expenditure Per-Student ($)*
Grade			
	9	1,248	5,507
	10	1,042	5,332
	11	663	5,805
	12	539	5,649
Track			
	A	1,196	5,357
	B	1,101	5,436
	C	1,194	5,800
School		3,489	5,534

Special education is a major expense item at the school. Not surprisingly, many of the highest cost children in the school receive special education services due to some disability. The school spends an average of $7,958 per pupil enrolled in Special Day Classes (156 students), nearly $7,000 (6,697) per pupil for students in Resource rooms (159 students), and an average of $5,612 per pupil for the 1,341 LEP students. The school also spends $5,564 per pupil on the 112 gifted students in programs at the school.

If the average figure of $5,534 per pupil were used to estimate the total expenditures of the five schools in the USC Family of Five area, along with the high school used in the computations, total school district expenditures for the 12,259 students in those schools would amount to just over $67.8 million.

Using the total enrollment of the Manual Arts school cluster—an area that more closely approximates the area considered in the children's budget analysis for non-school service providers—this figure translates to a total of $117.8 million.

These figures may be low. LAUSD's budget for 1999-00 was $8.4 billion. Divided by the 709,792 students in the district, this amounts to $12,259 per pupil. If that figure is used, total expenditures in the study area would amount to $260,994,110 or more than twice the estimate generated above.

While we attempted to include the district's expenditures in our computations, it appears some were missed. It seems appropriate to remove the expenditures for capital improvements, and for early childhood education and the adult schools from the total budget for the district, but even when that is done, the figure is considerably higher than our average. A question for analysis is to ascertain whether some district expenditures were not properly categorized, or if average salaries in our sample school were substantially lower than the district average, and/or if the average class size in that school considerably higher than the rest of the district. Further research is needed to determine the cause of this discrepancy.

Estimated Total Expenditures for Children and Families

Total Estimated expenditures by all service provides in the area surveyed range from a low of $405.8 million to a high of $549.0 million, or between $19,062 and $25,787 per child. This is summarized in Table 6. The table shows both the substantial amount of money available for each child in the area, and also shows that even using the highest estimate of school district spending, the public schools account for less than half of the total resources available for children in the neighborhood.

Table 6. Total Estimated Health and Social Service Expenditures in the USC Area

Service Provider	*Amount ($)*	*Percent of Total (%)*
Low Estimate		
County of Los Angeles	223,833,900	55.16
City of Los Angeles	15,403,054	3.80
Not-for-profit agencies	48,766,800	12.02
LAUSD	117,818,860	29.03
Total	405,822,614	
High Estimate		
County of Los Angeles	223,833,900	40.77
City of Los Angeles	15,403,054	2.81
Not-for-profit agencies	48,766,800	8.88
LAUSD	260,994,110	47.54
Total	548,997,864	

CONCLUSIONS AND IMPLICATIONS

In his column in the *New York Times* on March 7, 2001, Richard Rothstein suggests that gains in student achievement may be possible through relatively small investments in the living conditions of children in poverty. His point that for small investments in removing lead from the environment of children, or improving prenatal care for children and their mothers could reduce the incidence of physical and emotional problems that correlate with lower IQ scores makes a great deal of sense. Despite his logic, the first question many will ask is where will the money come from? The findings reported in this study suggest that there may be plenty of money; it is just reaching agreement as to how it should be spent.

Although schools constantly plead "poverty" in attempting to educate our children, the research reported above shows that in one urban high school, more than $16,000 are spent on some children. Moreover, despite an average expenditure of approximately $5,500 per pupil in that high school, that figure appears to be low when compared to the total expenditures of the school district where the school is located.

When the expenditures of other governments and private-not-for-profit agencies are considered in conjunction with school spending, it is estimated that there is between $19,062 and $25,787 per pupil, a substantial sum by any definition. Surprisingly, even using the high estimate of school expenditures, more than half of the resources available for children in this inner-city neighborhood are outside of the school district itself.

The implications of this seem staggering. First, it is clear from the school finance analysis presented above that there are considerable differences in what is spent on individual children at any school. Understanding those differences and why they exist may help considerably in understanding how money matters in helping improve student academic performance.

But, equally importantly, there are considerable resources available to help children and their families outside of the school system. What do these funds buy? And, if focused on improving the quality of life for children in poverty in ways that research suggests correlate with student outcomes, might there already be sufficient resources in the system to insure that children in poor urban environments have enough resources available to assure they can meet the performance expectations prevalent in today's policy environment?

It seems that before seeking additional funds for our schools, it would be worthwhile to see how the multitude of resources currently in place can be better used to meet the needs of our children and their families.

NOTE

1. A 1995 report by the Mayor's Committee on Children, Youth and Families describes the process used to tease out the children's portion of the city budget for fiscal year 1994–95. In that year, there were more than 100 city programs targeted to children and families which totaled $215 million or 4.5% of the City's core budget of $4.8 billion. Housing related expenditures (Housing Department and Housing Authority) accounted for an additional $213 million resulting in an even larger annual investment by the City of almost $428 million on services for families and children. The total of $427,862,635 is used for the calculations in this study.

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Part IV

PRIVATE SCHOOL FINANCE AND PRIVATE MONEY FOR URBAN PUBLIC SCHOOLS

CHAPTER 10

PRIVATE SCHOOL FINANCE

Tugging on the Curtain

Brian O. Brent

OVERVIEW

No volume addressing the fiscal issues that confront urban schools in the United States would be complete without giving some attention to private schools. I use the phrase "in the United States" deliberately to draw distinction between the funding of private schools in America and elsewhere. In other nations, governments assume that private schools serve a public purpose and frequently provide direct fiscal support (Boyd & Cibulka, 1991; Kober, 1998). U.S. private schools receive no such accommodation.

Nevertheless, a number of issues continue to draw public policymakers' attention to the fiscal dimensions of private schools. First, significant savings accrue to public schools when children are educated in private settings. Private elementary and secondary schools currently enroll about 10% of all students nationally, and 20% of all urban students (NCES, 2001a). A simple, albeit imperfect, estimate based upon the average per-

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pupil cost to educate these children in public schools, suggests that private schools save taxpayers about $25 billion annually. For purposes of this discussion, what is noteworthy about the private school subsidy is that, as detailed elsewhere in this volume, many urban areas struggle to adequately finance their schools. If a substantial number of private school students were to return to public schools, or public dollars were used to support private schools, already fiscally stressed cities would need to raise taxes or decrease educational services.

Secondly, many scholars argue that private school students outperform public school students, although they disagree about the reasons for this disparity (Henig, 1999). Some attribute performance differences to the selective student bodies of private schools (e.g., Baker & Riordan, 1998). Others argue that private students achieve more because their schools operate more efficiently than public schools (e.g., Bryk, Lee, & Holland, 1993; Chubb & Moe, 1990; Greeley, 1998; Hoffer, 2000). If private schools are indeed more efficient than public schools, a closer examination of how these schools put their limited resources to use might offer solutions to many public school problems.

Thirdly, school choice is an increasingly popular idea, both in practice and in public opinion (Hadderman, 2000; Sugarman & Kemerer, 1999). Statewide reforms now include discussions of vouchers, tuition tax credits, and contract schools; reforms that if enacted might provide substantially higher levels of public fiscal support for private schools (Good & Braden, 2000; Hill, Pierce, & Guthrie, 1997; Moe, 1995; Mintrom, 2000). Moreover, it's reasonable to anticipate that such reforms would increase the number of students enrolled in private settings, particularly in urban areas where choice programs most commonly emerge. For proof of this claim one needs only look to the Milwaukee Parental Choice Program, where the number of participating students has increased 30 fold in the last decade (Toulmin, 2001).

What links these issues together is the realization that policy debates concerning the role and efficacy of private schooling requires information about their sources and uses of educational resources. Unfortunately, private school finance is not well understood. A few private school associations collect, analyze, and report fiscal data for their members (e.g., National Catholic Education Association), but these associations do not represent all private schools, and, in some instances, do not make their findings public (e.g., National Association of Independent Schools) (NCES, 1995). Nor does the National Center for Education Statistics (NCES) collect or plan to collect detailed revenue and expenditure data from private schools.[1]

Given the range of policy issues implicated by private schools, I find it surprising that the way in which these schools secure and use resources is relatively unstudied. Perhaps this silence is partly the result of the difficulties involved in collecting information from so many disjointed and disparate sources (NCES, 1997a, 2000). Still, the importance of the topic warrants that it receives attention and provoking interest in private school finance is aim of this chapter.

The chapter begins with an examination of the nature and scope of private education in America. This discussion highlights the considerable diversity among private schools with regard to orientation and affiliation and provides the context in which to consider various features of private school finance. Next, I review the element of school finance that most distinguishes private schools from their public counterparts, their sources of revenue. Following that is a comparison of selected aspects of the resource use in private and public schools, including program offerings and staffing. A final section reflects on what policymakers know and do not know about private school finance and its implications for public policy.[2]

SETTING THE STAGE

Parents have a constitutional right to send their children to private schools and a high and growing number of families exercise this right each year (*Pierce v. Society of Sisters of the Holy Names of Jesus and Mary, 268 U. S. 510*). Currently, there are 27,233 private elementary and secondary schools in America, enrolling nearly 5.2 million students. However, if asked to describe a private school, I suspect that most people would depict their local parochial school or invoke images of exclusive boarding schools like those made famous in films such as *Dead Poets Society* (Kane, 1992). However accurate this view might once have been, each year single sex boarding schools and Catholic schools continue to decline in proportion to other private schools (Barbieri, 1992). Indeed, private schooling in the United States is far more diverse than any single example suggests.

The diversity within the private education sector is primarily because private schools, unlike public schools that must serve the broader society, can target a segment of the population who desire a particular type of schooling (Barbieri, 1992). As Table 1 reports, a parent might choose to send their child to an Amish, Muslim, Jewish, or Catholic school. Alternatively, parents can select one of the many nonsectarian options available.

Table 2 provides additional insight into the nature of private schooling by highlighting various organizational features of these schools. To facilitate the discussion, *all* private schools are initially grouped into one of three exclusive categories, Catholic (affiliated with the Roman Catholic Church), Other Religious (religiously oriented but non-Catholic), and Nonsectarian (no religious affiliation).[3] A fourth category provides data on

Table 1. Number and Percentage of Private Schools by Affiliation

	Schools		*Students*	
Category	*Number*	*Percent*	*Number*	*Percent*
Religious Affiliation				
Amish	709	2.6	20,473	0.4
Assembly of God	486	1.8	75,255	1.5
Baptist	2,109	7.8	317,178	6.1
Brethren	54	0.2	8,328	0.2
Calvinist	150	0.6	40,802	0.8
Christian (Unspecified)	3,611	13.3	533,008	10.3
Church of Christ	160	0.6	48,601	0.9
Church of God	145	0.5	15,140	0.3
Church of God in Christ	36	0.1	2,724	0.1
Episcopal	378	1.4	113,888	2.2
Friends	78	0.3	16,643	0.3
Greek Orthodox	28	0.1	4,614	0.1
Islamic	152	0.6	18,262	0.4
Jewish	691	2.5	169,751	3.3
Lutheran Church–Missouri Synod	1,100	4.0	166,111	3.2
Evangelical Lutheran Church	121	0.4	18,400	0.4
Wisconsin Evangelical Lutheran Synod	359	1.3	33,815	0.7
Other Lutheran	70	0.3	4,369	0.1
Mennonite	414	1.5	24,262	0.5
Methodist	130	0.5	16,166	0.3
Pentecostal	472	1.7	33,201	0.6
Presbyterian	153	0.6	34,588	0.7
Seventh Day Adventist	951	3.5	61,080	1.2
Roman Catholic	8,102	29.8	2,511,040	48.6
Other Religious	674	2.5	66,885	1.3
Nonsectarian	5890	21.6	808,101	15.7
Total	27,233	100.0	5,162,683	100.0

Source: U.S. Department of Education, National Center for Education Statistics, Private School Survey, 1999–2000, NCES 2001-330, by Stephen P. Broughman and Lenore A. Colaciello, Washington, DC: 2001, Table 2.

Table 2. Private School Characteristics

Characteristic	*Total Private*	*Catholic*	*Other Religious*	*Non-Sectarian*	*NAIS*	*Total Public*
School Level						
Elementary	60%	83%	52%	41%	33%	72%
Secondary	10%	14%	5%	14%	25%	24%
Combined	30%	3%	43%	45%	42%	4%
Size						
Less than 50	24%	<1%	33%	42%	5%	3%
50–99	17%	6%	23%	21%	8%	4%
100–149	13%	12%	14%	11%	10%	5%
150–299	26%	46%	18%	14%	31%	17%
Greater than 300	20%	36%	12%	12%	46%	71%
Program Emphasis						
Regular	82%	98%	91%	41%	—	—
Montessori	4%	<1%	1%	18%	—	—
Special Emphasis	2%	<1%	2%	5%	—	—
Special Education	5%	<1%	<1%	22%	—	—
Alternative	6%	<1%	6%	14%	—	—
Early Childhood	<1%	0%	<1%	2%	—	—
Admissions Requirements						
Admissions Test–Elementary	22%	22%	23%	18%	55%	—
Interview–Elementary	35%	28%	41%	42%	72%	—
Religious Affiliation–Elem.	15%	16%	20%	0%	6%	—
Admissions Test–Secondary	32%	58%	30%	23%	67%	—
Interview–Secondary	55%	41%	60%	52%	83%	—
Religious Affiliation–Sec.	14%	11%	23%	0%	4%	—
Coeducational	96%	94%	97%	95%	84%	—
Boarding	5%	2%	3%	12%	20%	—
Year Established						
Before 1904	11%	21%	6%	6%	23%	—
1904–1933	13%	28%	4%	6%	22%	—
1934–1963	23%	38%	14%	20%	28%	—
1964–1993	54%	13%	76%	68%	27%	—

Source: U.S. Department of Education, National Center for Education Statistics, Private School Survey, 1999–2000, NCES 2001-330, by Stephen P. Broughman and Lenore A. Colaciello, Washington, DC: 2001, Table 7; U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1993–1994, NCES 97-459, by Donald H. McLaughlin, Stephen Boughman, Project Officer, Washington, DC: 1997, Tables 1.1, 1.3, 1.6, 1.11, 2.3a, 2.3b, 2.4.

members of the National Association of Independent Schools (NAIS), an association of "elite" private schools. Approximately, one-third of NAIS member schools has a religious affiliation. Data for public schools is reported to permit comparisons between the sectors.

Beginning with the first set of figures, Table 2 reveals that most private schools, like their public counterparts, are elementary schools (grade 6 or lower). This is particularly true of Catholic schools. On the other hand, relatively few private schools focus exclusively on secondary students (schools with grade 7 or higher); instead offering combined programs, those that serve both elementary and secondary grades.

Private and public schools also differ in terms of their size. As Table 2 reveals, most private schools are small, enrolling less than 300 students. Moreover, many believe that it is the comparatively small size of private schools that explains their success. For example, smaller schools are believed to promote a greater sense of personal loyalty and institutional values among staff—traits that many argue contribute positively to student learning (Berlin & Cienkus, 1989; Conway, 1994; NCES, 1996a; Ornstein, 1991). In addition, some researchers believe that smaller schools enable educators to address more effectively the nonacademic pitfalls that confront many students, such as substance abuse, violence, and apathy (Fowler, 1992; NCES, 1997b).

Private schools are also more likely to have smaller classes than public schools. For example, in 1993–94, average class size was 22 for private elementary schools and 19 for private secondary schools. By comparison, public elementary and secondary schools averaged 24 students per class (NCES, 1997b). Like smaller schools, smaller classes are generally preferable to larger ones. For example, some argue that smaller classes allow teachers to give students more individualized instruction; thereby fostering improved student performance (Betts & Shkolnik, 1999; Rice, 1999). Although research on the relationship between student outcomes and class size is ambiguous, it is certain that smaller classes are more expensive (Biddle & Berliner, 2002).

Table 2 also reveals a number of programmatic differences among the various types of private schools. For example, most sectarian schools offer regular academic programs. Many nonsectarian schools, in contrast, offer programs that address specific student needs, including special and alternative education. In addition, Table 2 illustrates that many private schools are at least somewhat selective with regard to admissions. About half of all private elementary schools (47%) and most private secondary schools (72%) use one or more of the following criteria for admission: achievement tests, academic record, interviews, special needs, special aptitudes, and recommendations (NCES, 1997a). Many Catholic schools and Other Religious schools also base admission upon religious affiliation. It is important to keep in mind that private schools are free from the constitutional provisions that bind public schools, particularly with regard to student selection.[4]

Of course, changes in the public's demand for private education can cause schools to modify their admission standards. For example, whether because of changing social attitudes or financial realities, many single sex schools have become coeducational (NAIS, 2002). Similarly, only 5% of all private schools are boarding schools, and less than half of the students (47%) enrolled in these schools actually live on site (NCES, 1997a).

The last set of figures in Table 2 offers insight into the changing composition of the private education sector. For example, when private schools are compared according to year established, it can be seen that over the past 40 years the rate of Catholic school expansion has declined markedly (see also NCEA, 1998a). In fact, during this period the Catholic share of private school enrollment has decreased from 89% to 49% (NCES, 2001b). Several factors might explain this shift (Ravitch, 1992). First, beginning in the 1970s, the alternative school movement created hundreds of private schools, offering parents new, nonsectarian educational opportunities. Secondly, the growth of fundamentalist sects during this period fostered the establishment of Christian day schools. Thirdly, the migration of many Catholic families from cities to the suburbs, left the highly urbanized Catholic school system with fewer Catholic children to draw from (see also McLellan, 2000; Riordan, 2000).

Finally, Table 3 offers a profile of private school students. Again, there are several notable differences between private and public schools. First, the rate of private school attendance increases with family income. This finding is not surprising given that most private schools charge tuition, and only those students with adequate resources (or aid) can attend (NCES, 1997b).

Secondly, the percentage of racial and ethnic minorities is much greater in public schools than in private schools. It is worth noting, however, that the percentage of underrepresented students enrolling in private schools has increased considerably in the last 30 years (NCES, 1998; see also Riordan, 2000). Perhaps, an increasing number of private schools are discovering the advantages of offering students a diverse learning community. Perhaps, demographic shifts, particularly in urban areas, have prompted some private schools to look beyond their traditional constituency to fill their classrooms.

Thirdly, 82% of private school students attend schools located in or near cities (i.e., fringe), compared to only 60% of public school students. This suggests that private education in America is somewhat of an urban phenomenon. Partly the presence of so many private schools in urban settings might reflect the religious diversity of most cities. Partly the specialized nature of many private schools might require a sufficient pool of students

Table 3. Private School Student Characteristics

	Total Private	*Catholic*	*Other Religious*	*Non-Sectarian*	*NAIS*	*Total Public*
Gender						
Male	51%	50%	50%	46%	53%	51%
Female	49%	50%	50%	54%	47%	49%
Family Income						
$15,000 or less	3%	—	—	—	—	97%
$15,000-$30,000	7%	—	—	—	—	93%
$30,001-$50,000	9%	—	—	—	—	91%
$50,001 or more	16%	—	—	—	—	84%
Race/Ethnicity						
White, non-Hispanic	78%	74%	82%	81%	84%	67%
Black, non-Hispanic	9%	10%	9%	8%	6%	16%
Hispanic	8%	11%	5%	5%	4%	12%
American Indian	1%	1%	1%	1%	<1%	2%
Asian	4%	4%	4%	5%	6%	1%
Community Type						
Central City	52%	56%	49%	46%	57%	32%
Urban fringe	30%	31%	27%	34%	30%	28%
Large Town	2%	2%	2%	<1%	<1%	3%
Small Town	12%	9%	15%	17%	10%	21%
Rural	4%	2%	7%	3%	2%	16%

Source: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1993–1994, NCES 97-459, by Donald H. McLaughlin, Stephen Broughman, Project Officer, Washington, DC: 1997, Tables 2.2, 2.4, 2.5; U.S. Department of Education, National Center for Education Statistics, Public and Private Schools: How Do They Differ?, NCES 97-983, by Susan P. Choy, Washington, DC: 1997, p. 5.

that only urban areas can provide. On the other hand, a finding that most private schools are located in urban areas might simply reflect that many parents are dissatisfied with the educational options that urban public schools offer.

What follows the data presented in this section is a view of private schools that is different in many respects from public schools. Private schools tend to be smaller, restrictive about admissions, and less diverse than public schools. Within the private sector, parents can choose among a wide range of schools, varying in orientation and structure. Some private schools are religiously affiliated, while others are not. Some are highly selective and academic, while others are "alternative" schools for students who have not succeeded elsewhere. However varied in purpose, all private schools do have one common feature; they are largely dependent on nonpublic sources of revenue.[5]

SOURCES OF FUNDS

This section highlights what is known about the sources of private school funds. The discussion is, of necessity, somewhat lacking, since there is no clearinghouse that collects information about private school revenues (NCES, 1995, 2000). Nevertheless, it is possible to glean something about the nature and magnitude private school revenues by considering separately several revenue sources, including tuition, fundraising, endowment, church subsidies, and public support. In what follows, I review briefly the knowledge base for each of these broad areas.

TUITION

As Table 4 reports, nearly all private schools depend on tuition as a revenue source. However, the rate varies considerably among school types. For example, elementary and combined schools are less expensive than secondary schools, and religious schools are less expensive than nonsectarian schools. That nonsectarian schools are more expensive than their religious counterparts is not surprising when one considers that nonsectarian schools include special education schools (23%) and many of the elite NAIS schools (NCES, 1997a).

Table 4. Average Private School Tuition

	Total Private	*Catholic*	*Other Religious*	*Non-Sectarian*	*NAIS*
Charge Tuition	93%	99 %	92%	88%	100%
Offer Reduced Tuition	84%	95%	87%	60%	89%
Average Tuition:					
Elementary	$2,157	$1,572	$2,213	$3,773	$5,734
Secondary	$5,513	$3,699	$4,795	$10,488	$9,525
Combined	$4,155	$3,625	$2,078	$9,328	$8,404

Source: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1993–1994, NCES 97-459, by Donald H. McLaughlin, Stephen Broughman, Project Officer, Washington, DC: 1997, Table 1.5.

It is nevertheless difficult to determine the level of revenues that tuition payments yield. This is because nearly all sectarian schools and most nonsectarian schools offer some form of tuition discount. For example, most Catholic schools (88%) have a sliding tuition scale for families with more than one child attending the same school. In addition, many Catholic schools have a separate tuition scale for non-Catholic students (65%) and for students who are not members of the parish sponsoring the school (59%). Some Catholic schools even have a negotiated, or ability-to-pay, tuition policy (38%). Finally, another common practice among Catholic schools is to discount tuition when it is paid in advance (NCEA, 2000).[7]

The NAIS also reports that its member schools often discount their tuition, offering two primary types of financial assistance: need-based aid, dependent on a family's ability-to-pay, and no-need grants, often called merit awards (NAIS, 1998). In 1999–2000, NAIS member schools awarded 16% of their students financial aid based on economic need, with students receiving, on average, $7,531. Of those students that were awarded need-based aid, 36% were minorities (NAIS, 2000).[8] In addition, many NAIS member schools also offer merit awards to students who bring academic, extracurricular, athletic, or artistic talent to their schools, though these awards are typically less than half the amount need-based grants.

In many private schools, tuition is well below the full cost of educating students. For example, tuition in Catholic elementary and secondary schools covers only about 70% of actual costs (NCEA, 1998b, 2000). In part, this disparity might reflect a desire to lower financial barriers that could prevent individuals from enrolling in private schools or bring about their premature departure from these schools. However, this pricing strategy, coupled with financial aid policies, has a number of additional implications.

First, providing that demand is even slightly elastic, higher tuition charges (or lower aid) should lead to lower enrollments. The recent history of Catholic schools offers evidence of this phenomenon. Between 1980 and 1993, the tuition burden placed on Catholic school families increased by 70% (Harris, 2000). During the same period more than 1000 Catholic schools closed their doors (NCEA, 1998a). Many argue that there is a casual relationship between these two phenomena (Kealey & Collins, 1993; Harris, 2000).

Secondly, low student demand might require that schools alter their institutional priorities to attract sufficient numbers of students. For example, the percentage of Catholic children in catholic elementary schools declined from 52% in 1962 to 20% in 1991 (McLellan, 2000). In fact, in many urban areas, the enrollment of non-Catholic students in Catholic elementary schools now approaches 100% (NCEA, 2000). Similarly, the absence of excess student demand might require that the school relax their admission requirements.

FUNDRAISING

One means to supplement tuition revenues is to seek contributions from alumni, parents, businesses, and foundations. Indeed, although limited data is available, evidence suggests that fundraising is extensive and often accounts for a substantial portion of private school revenues. For example, 97% of all Catholic elementary schools engage in some form of fundraising, such as candy sales, raffles, auctions, and bingo. Moreover, proceeds from these activities comprise about 10% of all school Catholic school revenues (NCEA, 2000).

Nevertheless, schools incur a number of costs to support fundraising activities. Most obvious are the additional budgetary expenditures resulting from fundraising activities. For example, 88% of all Catholic high schools have established a development office, staffed by a full-time director (NCEA, 1998b). The additional demands on the time of school personnel constitute another, potentially large fundraising cost (Colson, 1995; Cooper & Peachev, 2001; Thompson & Flynn, 1988).

ENDOWMENT

Many private schools also maintain financial reserves commonly referred to as endowments. For example, half of all Catholic elementary schools have endowments, averaging about $250,000 per school (NCEA, 2000). In addition, 30% of Catholic secondary schools report endowments exceeding $1 million (NCEA, 1998b). Most NAIS schools also have endowments, with a median value of $30,264 per student (NAIS, 2002).

Several factors might prompt a private school to accumulate endowment funds.[9] For example, one reason for having an endowment is to maintain liquidity in the short term. Revenues might decline suddenly for various reasons. The number of qualified applicants who can afford full tuition might drop because of economic recession, or donations might decline because of the implementation of unfavorable school policy. Similarly, expenses might also increase suddenly. An energy crisis is just one obvious example. With a substantial endowment, these financial reversals can be ridden out with minimal disruption.

A related reason for having an endowment is that revenues from donations are uneven and often unpredictable. A benefactor might make an exceptionally large donation that is best spent over a period of years. Similarly, the subtleties of development efforts might make it more practical and productive to mount a large capital campaign every few years rather than seek to maintain a constant stream of smaller gifts. This concern provides a rationale for endowing funds for at least a short period.

It may be however that private schools maintain endowments not to weather short-term financial swings, but rather because of the preferences of donors and administrators. Indeed, many donors restrict their gifts for endowment use as a means of ensuring immortality. Alternatively, school officials and trustees might view the size of the school's endowment as a measure of their success as managers.

CHURCH SUBSIDY

Many sectarian schools rely on church subsidies for fiscal support. The subsidy might derive from sources such as the Sunday collection, church endowment, or church fund-raisers. In some instances, the subsidy represents a significant portion of school revenues. For example, on average, parish subsidies account 24% of Catholic elementary school revenues (NCEA, 2000). Nevertheless, parish subsidies appear to playing a diminishing role in Catholic school finance. Between 1969 and 1999, parish subsidies as a percent of school revenues declined from 63% to 24%. As noted earlier, the burden to replace these lost revenues fell largely upon families through increases in tuition (Harris, 2000).

PUBLIC FUNDS

Constitutional provisions regarding the separation of church and state restrict the use of public dollars to support private schools. Over the years, however, state and federal courts have permitted limited forms of government assistance to private schools, most notably the following (Kober, 1998; NCEA, 2000; Office of Non-Public Education, 2000).

- *Transportation*: Twenty-seven states provide publicly funded transportation to private schools.
- *Textbooks*: Seventeen states provide textbooks to private school students.
- *Auxiliary services*: Twenty-seven states provide auxiliary services to private school students, such as immunizations, vision and hearing tests, and diagnostic testing.
- *Administration*: Several states reimburse schools for maintaining mandatory records for attendance, health, and student performance (e.g., New York and Pennsylvania).

In addition, private school children are also eligible to receive services through several special government programs. For example, the Individual with Disabilities Education Act (IDEA) provides that if a child requires special services and the local public school does not provide these services, parents can enroll their children in a private school. Many districts, because of economies of scale, find it administratively and financially preferable to call upon private schools to educate disabled students (Rothstein, 1999; Wong, 1993).

The IDEA, however, does not make it possible for a special needs student to enroll in any private school. The IDEA requires only that a formula-driven level of funding be made available to the private school and, in some cases, the amount is inadequate to cover the actual costs (Rothstein, 1999). In these cases, either the parents must fund or the school must absorb the additional costs or the school will not allow the child to enroll.

Private school students can also participate in the federally funded Free and Reduced Price Lunch program. Similarly, disadvantaged private schools are eligible for Chapter 1 funds.[10] However, like other forms of public support for religious schooling, Chapter 1 has also been controversial. In 1985, the U.S. Supreme Court ruled that the administrative structure of the New York City Title 1 program involved "excessive entanglement" between church and state and was therefore unconstitutional. The Court's decision resulted in the relocation of many Chapter 1 services to religiously neutral sites (e.g., mobile vans), a move that prompted a substantial decline in participation by sectarian students, partly because of a lack of alternative sites and because of concerns about disruption in school schedules (Halsam & Humphrey, 1993).

Since 1985, there has been a modest increase in religious school participation in Chapter 1. However, sectarian school leaders continue to argue that the services available are inadequate to meet their students' needs (Halsam & Humphrey, 1993).

Finally, a small, but increasing, number of sectarian and nonsectarian private school students benefit from publicly funded vouchers. By far the most visible voucher initiative is the Milwaukee Parental Choice Program. Since 1991, this program has grown from 7 private schools, 300 students and $700,000 to 103 schools, 9,200 students, and $49 million in 2001 (Toumlin, 2001). Following Wisconsin's lead, the City of Cleveland created a voucher program in 1995 and, in 1999, the state of Florida established a statewide voucher program that allows students in underperforming schools to take vouchers to any school that accepts them. Each of these programs has come under legal attack. In 1998, however, the U.S. Supreme Court declined to review a Wisconsin state supreme court ruling, thereby leaving intact Milwaukee's program and ensuring that the state legal landscape regarding vouchers will remain complex for some time (Henig & Sugarman, 1999).

USES OF FUNDS

Collecting funds is the first order of private school finance. Yet, it is how private schools use those funds that is of paramount interest to education policymakers. Indeed, charges that private schools are cost-effective are predicated on the belief that, all-else equal, these schools are able to make more productive use of educational resources than public schools. Unfortunately, there is little information about how private schools use money. The NCES does offer annual estimates of the total private school spending by inflating data from a series of studies conducted in the 1970s (NCES, 2001b). However, scholars have urged caution about using these estimates because of uncertainty about their validity (NCES, 1995).

Despite the absence comprehensive data, it possible to draw upon other sources to present an imperfect, but informative, view of private school spending. I use two questions guide the discussion. First, how are spending decisions made? Second, how are resources allocated between operating and capital functions? As public and private school are contrasted, however, keep in mind that considerable variation exists between and within each sector.

CURRICULAR SPENDING DECISIONS

In many respects, private schools are the exemplars of school-based management (Ravitch, 1992). Free from the demands of state education departments, private school principals have greater latitude in how they use educational resources than their public school counterparts. For example, in the areas of establishing curriculum, hiring teachers, and making budget decisions, private school principals are considerably more likely than public school principals to think that they have a great deal of influence. Similarly, private school teachers are more likely than public school teachers to think that they have a good deal of control over selecting textbooks and other materials (NCES, 1997b).

Though able to design their own curricula, most private schools offer an educational program that is comparable in many ways to those found in public schools. For example, elementary school students in both sectors spend nearly the same amount of time in school, 6.4 hours a day and 179 days per year. Elementary teachers in public and private schools also divide their time among the core subjects in the same manner, spending about 50% of their time teaching English, 25% of their time teaching math, and 12 to 13% of their time teaching each science and social studies. However, private school teachers spend about 3 hours less on core subjects than do public school teachers, instead allocating this time to areas such as music, art, physical education, and sometimes, religion (NCES, 1997b, 1996c).

Table 5. Average Years of Study Required for Graduation

Service	*Total Private*	*Catholic*	*Other Religious*	*Non-sectarian*	*NAIS*	*Total Public*
English	4.0	4.0	3.9	4.0	4.0	3.9
Math	2.9	2.9	2.8	3.1	3.1	2.5
Computer Science	0.6	0.6	0.7	0.5	0.5	0.3
Social Studies	3.3	3.2	3.3	3.3	2.9	3.0
Science	2.5	2.5	2.5	2.6	2.5	2.2
Language	1.2	1.6	1.0	1.5	2.3	0.3

Source: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1993–1994, NCES 97-459, by Donald H. McLaughlin, Stephen Broughman, Project Officer, Washington, DC: 1997, Table 4.6.

When high school academic programs are compared, private schools appear to be slightly more rigorous. In 1983, the National Commission on Education and the Economy (NCEE) proposed that all high school graduates be required to complete at least 4 years of English; 3 years each of social studies, science, and mathematics; and .5 years of computer science (NCES, 1997b). As Table 5 reports, compared with public schools, private secondary schools come closer to meeting the NCEE standards. Similarly, private secondary schools required more years of foreign language than did public schools.

In addition to their regular curricular offerings, schools provide various other services to support the academic needs of their students. As Table 6 shows, support services are more commonly found in public than private schools. This might occur because fewer private school students need these services or because private schools cannot afford them.

Table 6. Percent of Students Receiving Special Services

Service	*Total Private*	*Catholic*	*Other Religious*	*Non-sectarian*	*NAIS*	*Total Public*
ESOL	4%	3%	6%	4%	3%	7%
Bilingual	2%	<1%	23%	36%	<1%	14%
Remedial Reading	11%	10%	7%	21%	8%	14%
Remedial Math	9%	8%	6%	21%	6%	11%

Source: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1993–1994, NCES 97-459, by Donald H. McLaughlin, Stephen Broughman, Project Officer, Washington, DC: 1997, Table 1.9.

Another proxy for curricular spending is the degree to which schools make use of instructional technology. In recent years, private schools have made considerable strides in computer and Internet availability. In 1998, there was an average of six students per computer in private schools, compared with nine computers in 1995. Similarly, the proportion of private schools connected to the Internet increased from 25% in 1995 to 67% in 1998–99. Despite these gains, however, private schools continue to lag behind public schools on several important technology measures, including the ratio of students to instructional computers (8 versus 6) and the proportion of Internet connected schools (67% to 89%) (NCES, 2001c, 1999). In addition, although private schools tend to have larger library collections (on a per pupil basis), public school library media centers tend to be better staffed and more technologically advanced (NCES, 1997a,b).

OPERATING EXPENDITURES

Each year the NCES provides data on public school expenditures by function. Over the years, the data have revealed what has become the typical spending pattern in public schools: about 62% of the operating budget is allocated to instructional expenditures, 9% to student and instructional support (e.g., libraries, guidance and health), 2% for district administration, 6% for building administration, 10% for operations and maintenance, 4% for student transportation, 4% for food, and 3% for other support services (NCES, 2001b). Given the operational differences between public and private schools it is unlikely that public school spending patterns translate directly into how private school dollars are spent. For example, although private schools often have a board of trustees, principals (or headmasters) conduct the day-to-day operation of the schools. Thus, central administration costs for most private schools are negligible. In addition, as noted earlier, many states provide busing to private school students, thereby eliminating transportation costs in most instances.

On the other hand, like public schools, it is probable that private schools devote the bulk of their budgets to personnel costs (NCES, 1995). In 1994, public school districts spent about 70% of their operational budgets on salaries and benefits for teachers, principals, and instructional support staff (NCES, 2001b). In the same year, personnel costs for Catholic secondary schools accounted for 74% of total spending (NCEA, 1995; see also, Harris, 2000).

Although data is unavailable on the magnitude of personnel costs for private schools, the SASS offers strong descriptive information about the nature of these costs. Table 7 provides a demographic profile of public and private school teachers. As Table 7 illustrates, there are considerable differences between the two sectors. For example, on average, public school teachers earn 56% more than private school teachers earn. Other religious schools followed closely by Catholic schools are the poorest paying, while NAIS schools are the highest paying private schools. Public schools are also much more likely to provide health and retirement benefits, an additional cost that typically averages 25% of salaries (NCES, 2001b).

Table 7. Principal Characteristics

Characteristic	*Total Private*	*Catholic*	*Other Religious*	*Non-sectarian*	*NAIS*	*Total Public*
Average Salary	$29,714	$28,058	$24,563	$40,931	$61,158	$54,858
Benefits						
Medical Insurance	64%	79%	54%	63%	NA	92%
Dental Insurance	35%	44%	27%	38%	NA	66%
Life Insurance	35%	47%	25%	38%	NA	71%
Retirement	46%	68%	34%	39%	NA	70%
In-kind	55%	55%	55%	54%	NA	46%
Highest Degree Earned						
Less than Bachelor's	8%	<1%	16%	7%	2%	0%
Bachelor's	26%	12%	34%	27%	13%	1%
Master's	52%	73%	40%	45%	60%	63%
Ed. Prof.	8%	11%	5%	10%	7%	26%
Doctorate	6%	3%	5%	11%	18%	9%

Note: In-kind benefits include housing, meals, tuition, and transportation.
Source: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1993–1994, NCES 97-459, by Donald H. McLaughlin, Stephen Broughman, Project Officer, Washington, DC: 1997, Tables 3.7, 3.9.

Similar disparities in salary and benefits occur at the administrative level. As Table 8 reports, public school principals earn substantially higher salaries than do most private school principals. NAIS principals are the single exception to this pattern.

Several factors might explain the differences in compensation among and between the sectors. First, higher public school salaries could be explained, in part, by differences in the qualifications of teachers and principals. For example, principals and teachers in public schools are more likely than their private school counterparts to have earned at least a master's degree. In addition, about 30% of private school teachers are not certified in the field of their main assignment, compared to only 3% of public school teachers. The lack of certification for many private school teachers

Table 8. Teacher Compensation

Characteristic	*Total Private*	*Catholic*	*Other Religious*	*Non-sectarian*	*NAIS*	*Total Public*
Average Salary	$21,898	$21,652	$19,356	$25,052	$29,077	$34,189
Benefits						
Medical Insurance	60%	68%	49%	58%	74%	87%
Dental Insurance	36%	40%	29%	33%	41%	66%
Life Insurance	36%	40%	25%	42%	54%	61%
Retirement	47%	54%	37%	49%	70%	63%
Housing	7%	4%	11%	5%	12%	<1%
Meals	20%	14%	21%	31%	46%	1%
Transportation	4%	3%	4%	4%	3%	5%
Tuition	28%	20%	30%	35%	45%	20%
Child's Tuition	15%	10%	21%	13%	22%	0%
Child Care	3%	1%	6%	3%	3%	<1%
Certified by State	71%	84%	59%	67%	59%	97%
Highest Degree Earned						
Less than Bachelor's	7%	3%	12%	5%	1%	1%
Bachelor's	59%	63%	58%	54%	46%	52%
Master's	30%	30%	25%	35%	46%	42%
Ed. Prof.	3%	3%	3%	4%	3%	5%
Doctorate	2%	1%	2%	2%	4%	1%
Salary Satisfaction	4.0	3.2	4.9	4.1	4.4	4.2

***Note*:** Salary satisfaction is scaled from least satisfied (0) to most satisfied (10).
***Source*:** U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1993–1994, NCES 97-459, by Donald H. McLaughlin, Stephen Broughman, Project Officer, Washington, DC: 1997, Tables 3.3, 3.4, 3.12, 3.13.

might also prevent the free flow of teachers between the two sectors that would ultimately have the impact of narrowing salary differences (see NCES, 1996b).

Alternatively, the salary differences between the two sectors might be because private schools are more desirable places to work, justifying the salary sacrifice (NCES, 1996b). It is well documented that many of the ways in which public and private schools differ reflect differences in school climate. Exposure to crime or threat is far less common in private schools. Private school teachers are also far less likely to believe that certain negative student attitudes and behavior are serious problems in their schools (NCES, 1997b). In addition, private school staff are more likely to receive in-kind compensation, such as meals, tuition, and childcare. Such in-kind contributions are rarely available to public school employees. These and other institutional factors might explain why, on average, private and public school teachers are equally satisfied with their salaries (see Table 7).

CAPITAL EXPENDITURES

Last year, U.S. public schools spent $21.2 billion on school construction and renovation, marking the end of a decade in which capital expenditures grew by nearly 40% (U.S. General Accounting Office, 2000).[11] This spending pattern reflects a variety of influences, including aging school facilities, increasing enrollments, new developments in instructional technology, and a strong economy (Brent & Cianca, 2001). Although private schools faced similar environmental conditions, it is unclear whether they experienced comparable growth in capital expenditures. Data on capital spending for private schools is rarely reported, except when related costs are included in operating expenditures (e.g., interest) (NCES, 1995).

Nevertheless, in 1995 the NCES provided an admittedly "rough" estimate of private school capital spending. Based on the property value of a sample of Catholic high schools, the NCES estimated that capital expenditures for private schools were about 10% of operating costs (NCES, 1995). This figure was obtained by first assuming that building and grounds have an estimated useful life of 30 years. Next, they assumed that private schools annually invest 1/30th of the value of buildings and grounds to replace their current stock. Finally, to obtain the annual expenditure, the total value of building and grounds for Catholic high schools was divided by 30 and compared to current operating expenses. Despite some understandable, yet questionable assumptions, most notably the amortization of land, the NCES estimate seems to be a reasonable proxy for private school capital expenditures. In the same year, the NCES estimated that capital expenditures for public schools accounted for 9.6% of total spending (NCES, 1995).

A SPARSE AND DISAPPOINTING LITERATURE

This chapter began with the proposition that it is time to take stock of what we know and do not know about private school finance. Such a work would provide public policymakers with a broader context from which to base their understanding and frame their views about urban education reform. Such a work would also help to elevate the level and quality of discourse regarding school choice, particularly debates about the efficiency of private schooling. Finally, those intimately involved with private schools would find that the information presented prompts new thinking about how to manage their schools.

Unfortunately, the picture of private school finance revealed in this chapter is largely unfinished, only partially revealing how private schools secure, allocate, and use educational resources. Indeed, many important questions concerning private school finance remain unresolved. The following represent just a few possibilities:

1. How much revenue do private schools appropriate per pupil and how do these figures vary by institutional type, urbanicity, grade-level, and region?
2. What are private schools primary sources of revenue (e.g., tuition, donations, endowments, and subsidies) and how does the nature and magnitude of these revenue streams vary by institutional type?
3. What is the nature and magnitude of tuition discounts and how do these discounts vary by institutional and student type (e.g., ethnicity, SES, and urbanicity)?
4. What is the nature (e.g., investment mix, restricted versus unrestricted), size, yield, and spending rate of private school endowments and how do these measures vary by institutional type?
5. How much do private schools spend per pupil and how do these expenditure levels vary by institutional type, urbanicity, grade-level, and region?
6. How much do private schools spend by grade level and program area (e.g., regular, compensatory, and special education)?
7. How much do private schools spend by function (e.g., instruction, instructional support, administration, maintenance, and capital), object (e.g., salaries, professional development, supplies and materials), and content area (e.g., English, science, art, religion, and so on)?
8. Would a voucher of, say, $2,500 be enough to cover the operating expenditures of most inner city nonsectarian and sectarian schools?
9. When juxtaposed with student performance measures, do some private school types use resources more efficiently than other private and public schools? If yes, what resource use practices produced these results and are these practices transferable to other, less efficient schools?

Of course, answering these and other policy relevant questions will require new and more refined data that will give researchers an unprecedented view of private school finance. Judging from the limited data that has emerged in the past decade, however, there is little reason to anticipate any large-scale attempt to disentangle the fiscal dimensions of private schools. As noted earlier, the NCES currently has no plans to collect detailed finance data from private schools. This will prove to be a serious limitation in this area of research. Nevertheless, the importance of the topic warrants that it receives more attention and a small, but persistent number of scholars continue to make efforts to disentangle the elements of private school finance. It is my hope that this chapter generates further interest in the topic.

NOTES

1. In 1999, the NCES pilot tested a private school finance survey (NCES, 2000). Stephen Broughman, project member and NCES representative, reported to this author that there are currently no plans to expand the survey.
2. Readers will note this author's effort to provide ample citations throughout the chapter. I do so to render due attribution and to facilitate readers' ability to consult more extensive treatments of private school fiscal policies than any single chapter affords.
3. This typology is one of several classification schemes used by the NCES to report data on private schools (McMillen & Benson, 1991; NCES, 2001a, 1997a).
4. See Imber and Van Geel (2000) for a thoughtful discussion of government regulation of private schools.
5. Readers interested in learning more about the nature of private schooling in American are encouraged to refer to Kane (1992) and Youniss and Convey (2000).
6. For a thoughtful discussion of Catholic school tuition policies see Kealey and Collins (1993).
7. Many member schools assess financial need by using the NAIS-owned School and Student Service for Financial Aid operated by the Educational Testing Service (ETS).
8. This discussion draws from Hansmann's (1990) framework on institutional endowment behavior.
9. Section 1017 of Chapter 1 of Title I of the Elementary and Secondary Education Act requires that public school districts provide special education services to "educationally deprived" private school children.
10. Capital expenditures, sometimes referred to as capital outlay is a broad term that includes spending for deferred maintenance, new construction, renovation, retrofitting, additions to existing facilities, and major improvements (see Crampton, Thompson, & Hagey, 2001).
11. The SASS is a set of integrated questionnaires that collect information about schools and the staff who work in them. Education data are most useful when they describe contemporary conditions in schools. Although the SASS was last administered in 1999–2000, this data was unavailable at the time this chapter was written.

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CHAPTER 11

PRIVATE MONEY/ PUBLIC SCHOOLS

Early Evidence on Private and Non-traditional Support for New York City Public Schools

Amy Ellen Schwartz, Hella Bel Hadj Amor, and Norm Fruchter

INTRODUCTION

The use of private money to support public schools in New York City captured the attention of the public in 1997, as parents in a Greenwich Village elementary school tried to raise private salary funds to prevent one of their teachers from being reassigned. While some heralded the parents for their commitment to their children's education and their willingness to fight to improve their public school, others lamented the action, citing concerns for funding equity between more affluent schools and economically disadvantaged schools. In the end, the Chancellor decided to maintain the teacher in question, but not to accept the privately-raised revenues out of a

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concern for setting a precedent for allowing parents to fund "core functions" rather than "enrichment" programs. Clearly, this concern stemmed, at least in part, from an underlying worry that allowing schools to seek and accept privately-raised revenues would pose a threat to the equity of schooling in New York City. Would accepting privately-raised money lead schools serving higher income students to have better funding (or better teachers, smaller classes, for example) than those serving lower income students? At the same time, privately-raised resources may also present efficiency concerns. Would curricula or programmatic offerings be chosen based upon the availability of outside funding, rather than the particular needs of the students? This paper explores both the equity and efficiency issues surrounding the use of privately-raised revenues to support public schools, and provides some evidence on the distribution of privately-raised support across public schools in New York City.

New York City's public schools (and others around the country) have long been supported by private funding that supplements the resources the Board of Education provides. Thus far, there has been little information about the scope and nature of that private-sector support.[1] In addition, schools apply for and receive support from competitive grants funded by state, federal and non-governmental agencies. Again, there is relatively little existing research that examines the distribution of these resources across schools within a district. How much money is raised from these nontraditional sources? What sorts of schools receive this support? Do some receive more than others do? How does this support vary with the characteristics of the school or the school community?

This paper makes use of data on sources, nature and distribution of private sector support for New York City's public schools, collected in 1999 by New York University's Institute for Education and Social Policy, in concert with the New York City Board of Education's Office for Development (BOE/OD). These data are matched to school-level demographic, academic and expenditure data as well as to information on revenues obtained from state, federal and other competitive (that is, non-entitlement) grants. As detailed below, our data on private support includes both administrative data on contributions to public schools and information obtained from an exploratory survey of a set of not-for-profit organizations providing services to New York City public schools in 1998. Thus, our data underestimates the private support for public schools, particularly because the survey did not include information on the universe of organizations supporting public schools in New York. Some of those organizations did not respond to the survey; many others were not included because we were unclear about the nature of their support and whether it should be included in our survey categories.[2] Thus, many of the ongoing supporting activities have not been clearly captured by the data collected.

Given the partial nature of the data, then, results are most interesting for the broad scope of activity that *is* indicated; our results show that 962 schools out of the approximately 1,100 in New York City received some support in the 1997–98 fiscal year from the private sector, through contributions of cash, equipment or services. Coverage was nearly universal when support from competitive and non-entitlement grants from other governmental units were included. Thus, previously articulated concerns that too few schools might be receiving supplemental support seem unwarranted. At the same time, the results reveal significant differences in the amount of private and grant support schools receive. While some schools receive private support worth in excess of $100,000, for example, others receive only token amounts. Further, regression analyses suggest that private and grant support varies with the characteristics of the student body. On one hand, our analyses indicate that the total amount of private and grant support decreases (mildly) with the representation of students eligible for free or reduced price lunch. On the other hand, resources increase with the representation of Limited English Proficient students. This suggests that additional attention needs to be paid to understanding the distribution of private support across schools, as well as the factors that determine the amount of private support received.

MEASURING PRIVATE SUPPORT FOR PUBLIC SCHOOLS

While parent fundraising to supplement the resources employed in their children's schools has captured the public imagination, private support flows from a variety of sources. Foundations, corporations, individuals and not-for-profit organizations of various kinds provide contributions in the form of cash, goods and services (i.e., donating computers or art supplies, mentoring programs, visiting artists, principal-for-a-day). These can represent substantial amounts of money. As an example, in 1998, a group of alumni of the Brooklyn Technical High school pledged to raise ten million dollars over five years to create an endowment for the school.[3]

New York City Board of Education regulations require the reporting of significant contributions of cash, materials and equipment, when the value is greater than $2,000. Reporting requirements for contributions of services are less clear and there is no requirement to report small donations. Of course, compliance with these regulations is undoubtedly far from complete, reflecting a combination of uncertainty about the rules and the ease of sidestepping them. (As an example, a single contribution of $2,500 worth of computer equipment would have to be reported, but five $500 contributions distributed over a period of time might not have to be reported.)

Contributions to public schools include untold numbers of very small contributions (i.e., donations of time and supplies to individual classrooms by individual parents). Clearly, it would be impractical to try to track them all and the utility of doing so is not obvious.[4] Contributions of personnel services present particular conceptual and practical challenges. Volunteers of various kinds provide assistance to public schools including: parents chaperoning school trips; employees of local businesses making presentations on their careers, industries or expertise; participants in mentoring programs and volunteer literacy programs; and student teachers from local colleges, among others. Accounting for these services requires attaching a value to them, which, in turn, requires some information on the number of hours of service and the "wage" of the volunteer. Unfortunately, these sorts of activities are rarely tracked and data are largely unavailable.

Finally, an important source of support for New York City public schools comes from a large number of not-for-profit organizations that, in turn, obtain funding from a combination of public and private sources to provide a wide range of services to New York City public schoolchildren. These services include, for example, reading and math curriculum provision and teacher training, other forms of professional development, arts instruction, vocational counseling, conflict resolution and training in school-based management. While there is some central oversight for these activities, the services they provide are generally not tracked as contributions to schools.[5]

Note also that schools can gain resources beyond those provided by the Board of Education by applying for support from other governmental units or institutions. These include municipal offices (e.g., the city council), federal or state agencies (e.g., U.S. Department of Education, State Education Departments), or organizations like the Federal Reserve Bank, that run a variety of school programs.

ISSUES OF EQUITY AND EFFICIENCY

Equity

Private support for public schools clearly raises concerns about equity. Put simply, some schools may be better able to raise revenues from private sources than others, and the resulting distribution of private resources may run counter to public notions of fairness.[6] School spending may be made inequitable if schools with more affluent students are disproportionately able to raise revenues. It seems likely that Parent Associations (PAs) and Parent Teachers Associations (PTAs) will be more successful in raising money in schools with wealthier parents and in wealthier communities. Further, more prosperous schools may be more resourceful in identifying parents with experience in grant writing and fundraising, and therefore may be more capable of raising revenues from public- and private-sector sources as well.

Conversely, private-sector funders and not-for-profits may be more focused on helping needier schools and there may be more funds available to support children "at-risk" of adverse educational outcomes. Similarly, corporate sponsors may well be more interested in supporting schools that focus on areas related to their industry, or in training students to be future employees in that industry. Examples include both traditional vocational schools as well as the emerging "theme" academies, such as those that concentrate on travel and tourism, or finance. To the extent that less fortunate students disproportionately enroll in these schools, the impact of these industry contributions may well be equalizing.

Further, some have argued that parents have a fundamental right (or even obligation) to support their own children's public schools through contributions and volunteerism, for example.[7] Thus, restricting parents in their efforts to provide support in this way may be regarded by some as unfair. Finally, privately-raised funds may serve to keep middle class students in public schools, as parents or communities desiring a broader range or better quality of services than those afforded by the Board of Education resources supplement those funds with privately-provided resources.

It is, of course, just as possible that private support increases, rather than decreases, with school poverty rates, for example. Or private support may show some other pattern. Whether private resources work to reinforce or erode equity in school funding can only be determined empirically. Are private resources concentrated in only a small set of schools or are they broadly distributed? Do schools receiving certain forms of private support differ from those without such support, or with support from different sources? Are they poorer? Do they have more nonwhite students? More immigrant children? More children with limited English proficiency? Ultimately, these are empirical questions. These issues are addressed below.

Efficiency

Private-sector involvement in public schools also raises questions about efficiency. Private resources might well not serve to improve educational outcomes, for instance, but instead distract from a school's primary educational mission, thereby jeopardizing student performance. Time or attention taken away from the study of core subjects like mathematics and reading to devote to extracurricular activities may prove a disservice to students. Further, fundraising may distract principals and school leaders from addressing instructional issues critical to schools. Again, whether or not privately-provided services improve overall student performance is an empirical question.

Contributions of cash and equipment, however, are interesting in a different way. One of the current popular school reforms is school-based budgeting which, it is argued, will improve schools by freeing them from constraints placed on their resource use that reduce their efficiency. For example, schools may be unable to use newly-provided computers because of an insufficient supply of cables or electrical outlets. However, private resources could be used in such a case to enable the schools to properly connect the computers. To some extent, privately-raised revenues may serve to improve schools by improving the efficiency of the use of their publicly-provided resources. Whether and how this happens is essentially an empirical question that is worthy of future research.

Finally, it should be noted that ignoring privately-raised revenues in efficiency analyses, as is typically done, might well lead to biased estimates of school efficiency. Put simply, schools benefitting from significant amounts of privately-raised revenues may appear to be producing higher test scores, for example, than others with comparable students and comparable levels of funding from the Board of Education. Thus, some schools that are deemed "efficient" based upon the outcomes they deliver using publicly-provided resources may, in fact, be less efficient than they appear—if the higher level of outcomes is, in fact, made possible by additional resources that are not measured in the available data.

DATA DESCRIPTION AND STATISTICAL PROFILE

We collected data on private support for New York City public schools during the 1997–98 fiscal year (hereafter 1998) from two sources.[8] First, data on contributions was taken from administrative records of the Board of Education, including both the records of the Fund for Public Schools, Inc. (FPSI) and the monthly Calendar. FPSI is a not-for-profit organization through which foundations, corporations, and individuals provide financial support for schools, districts and programs administered by the New York City Board of Education.[9] In addition, schools, community school districts and programs are required to report significant gifts of cash, materials and equipment (valued in excess of $2,000) on the Board of Education's monthly Calendar. Thus, the Calendars provide information on private contributions to public schools in addition to the amounts contributed through FPSI. Although grants from federal, state and local government funds are reported on the Calendar, these reported contributions are not included among "Board of Education reported resources" because they are reported separately in the School Based Expenditure Report, described in greater detail below.

Second, data on private sector support for public schools are obtained from an exploratory survey of selected not-for-profit organizations supporting public schools (NFP) in New York City. The survey was developed by BOE/OD and was sent to more than 90 not-for-profit organizations. The sixty-six organizations that responded encompass most of the key not-for-profit organizations that actively provide a wide range of services in the New York City public schools. Five of these organizations reported in such a way that it was not possible to include them in the analysis.

We matched these data with expenditure, demographic, and test score data from the Board of Education's Annual School Reports (ASR) and School Based Expenditure Reports (SBER). ASR data provide demographic and socioeconomic characteristics of students in public schools, including the ethnic composition of the student body, the percentages of females, immigrant students, students with Limited English Proficiency, students in special education and poverty. SBER data provide a great deal of detail about sources of revenues—including information about state and federal competitive (non-entitlement) revenues and a range of other non-entitlement, non-Board of Education funds.[10] While these are not private revenues, per se, these revenues may operate, in some measure, like private support and may be garnered in similar ways as well—requiring grant applications and/or entrepreneurial activity by the principal or other members of the school community. Table 1 provides descriptive statistics for selected variables described in greater detail below.

New York City public schools educate more than 1.1 million students in more than 1100 public schools. Elementary and middle schools are organized into 32 sub-city school districts termed "community school districts" that oversee instruction and administration of their member schools. Most high schools, special education schools, and some particularly poorly performing schools are governed by another set of special sub-city districts. In 1998, the total spending summed to more than $8 billion or $8,246 per pupil. Students in New York City public schools are predominantly poor (72%), and, compared to the nation, disproportionately black (37%), Hispanic (38%), and Asian (10%). At 16% of the student body, Limited English Proficiency is common. More than 8% are recent immigrants and 6% are classified as special education students.

Table 1. Descriptive Statistics, New York City Public Schools, 1997–1998 (Number of Schools = 1023)

Variable	*Mean*	*Minimum*	*Maximum*
Private Support Per Pupil	$59.0	$1.0	$1,901.7
State Grants Per Pupil	$104.3	$8.4	$2,402.7
Federal Grants Per Pupil	$52.5	$1.9	$820.3
Other Grants Per Pupil	$132.9	$68.5	$386.3
Total Per Pupil	$348.4	$104.9	$2,873.6
Total Spending Per Pupil	$8,245.7	$1,673.1	$22,414.4
Percent White	15.7	0.0	93.8
Percent Black	36.7	0.2	97.6
Percent Hispanic	37.5	1.3	98.1
Percent Asian	10.2	0.0	94.3
Percent Female	49.1	6.0	87.9
Percent Immigrant	8.2	0.0	96.3
Percent LEP	15.9	0.1	100.0
Percent Free Lunch	71.7	5.9	100.0
Percent Spec. Ed.	6.1	0.0	37.7
Enrollment	1,001.5	51.0	5,004.0

Variable	*Mean*	*Total*
Enrollment	1,001.49	1,024,521
Elementary Schools	0.65	663
Middle School	0.18	180
High School	0.16	166
Collaborative	0.01	14
Manhattan	0.17	177
Bronx	0.21	212
Brooklyn	0.34	343
Queens	0.23	235
Staten Island	0.05	56

Notes: *Private Support* includes contributions of cash, equipment, and services. *State Competitive Grants* include legislative grants, magnet grants and Comprehensive Instructional Management System grants. *Federal Competitive Grants* comprise magnet grants and federal bilingual Program (Title 7) grants. *Other (Non Entitlement) Grants* consist of capital projects, building BOE/OD maintenance, student information services, early grade paras redeployment, self-sustaining accounts, Employment Prep Education Program, city funded programs and food services. The total is the sum of the above.

Total Spending incorporates direct services to schools, district and Superintendency costs and systemwide costs (no pass-throughs). Direct services to schools include classroom instruction, instructional support services, school leadership, ancillary support services, building services and district support; district/superintendency costs are composed of instructional support/administration and other district/borough costs; systemwide costs encompass central instructional support, central administration and other obligations.

Contributions Reported Directly to the Board of Education

In 1998, 1087 donations of cash and stock were reported to FPSI or through the Calendar, representing contributions by 853 different donors totaling $2,989,562. While many donors contributed only small amounts of money, donations averaged $2,750, ranging from a low of $5 to a high of $141,875. Gifts of cash and stock averaged $2,636, while in-kind gifts (of materials and/or equipment) averaged $6,001. Two hundred and sixty-eight donors donated less than $50 each.

In total, contributions to more than 191 distinct schools, programs or community school districts were reported to the Board of Education through FPSI or the Calendar. More than three-quarters (149) of the recipients were schools, receiving an average of $14,475, for a total of $2.2 million donated directly to schools. The amount received varied widely across schools, however. As an example, five schools received less than $100 and five received more than $60,000. Excluding these extremes, the average school received roughly ten thousand dollars.

Fourteen community school districts received direct contributions as well, averaging roughly $17,000. Whether these funds were ultimately passed through to schools in these districts is unknown, and certainly worthy of further study in the future.

Contributions were made to support a wide range of activities and to purchase a variety of equipment and materials needed by the schools. Examples include grants to purchase computers, models and internet connections; curtains for the school auditorium and books; athletic supplies; library books, instructional materials, tables and equipment repairs; as well as grants to operate an after school enrichment program from 3:00–6:00 p.m. on school days.

These figures suggest that direct private support for public schools is limited. Less than 20% of all public schools report receiving direct contributions of materials, equipment or cash, and, while a larger number may receive some support channeled through their community school districts, these beneficiary schools would still represent a minority of New York City public schools. Of course, much support is likely to be unaccounted for in these data, particularly the broad array of smaller contributions made by parents and communities to their local schools.[11] Nonetheless, it seems less likely that large contributions of cash, materials and equipment are unreported to the Board of Education and unaccounted for in our data.

Further, as detailed below, our survey of not-for-profit organizations and investigation of competitive grants suggest a much broader distribution of the benefits of private and non-traditional support.

Survey Results: Contributions by Not-for-Profit Organizations

As described above, in 1998, 66 questionnaires were returned by not-for-profit organizations surveyed by the BOE/OD. According to the survey results, the sixty-one organizations provide services to 919 schools, five specific programs or initiatives and 17 of the 32 community school districts in New York City. These organizations spent roughly $103.5 million on direct services to public schools—an average of $1.7 million per organization.

These not-for-profit organizations provide a wide range of services to public schools—including curricular programs in arts, literacy and science, professional development services, after-school programs, and many others, and receive their funds from both private and public sources. The average value of the services provided to a school or school program was almost $110,000 and, in all, more than 80% of all New York City public schools received services provided by these sixty-one organizations. Thus, the support from these not-for-profits far exceeds the value of direct contributions of cash and/or equipment reported to the Board of Education. And, the broad reach of these organizations is impressive. Further, it is certain that these numbers understate the true contribution of not-for-profit organizations of this kind, because these numbers do not reflect the activities of organizations that were not selected for our sample or were unable to respond to the survey.

Interestingly, while schools in all five boroughs of New York City received support from the surveyed organizations, the support was far from even. While all schools in Manhattan (223) and a majority of schools in the Bronx (186 or 82%) and Queens (200 or 78%) received support from not-for-profits, less than half of the schools in Brooklyn (180 or 49%) and Staten Island (27 or 44%) did. The value of the services varied as well: while schools in Manhattan received an average of more than $90,000; schools in Brooklyn and the Bronx received considerably less, averaging roughly $50,000 per school. These exceed the roughly $32,000 averaged by Queens schools or the roughly $26,000 received by the average Staten Island school.

Several community school districts were direct beneficiaries of support from the not-for-profits, including three districts in Manhattan ($687,935), five in the Bronx ($254,754), six in Brooklyn ($890,547) and one in Queens ($158,762). As noted earlier, it is unclear how these services were distributed among the schools in these districts and we have made no effort to allocate them. However, even in the district-level analyses, Manhattan and Brooklyn schools again seem to receive substantial resources, with schools in Queens, Staten Island and the Bronx trailing.

While these differences are driven, to some extent, by differences in the mix of elementary, middle and high schools across boroughs, as well as differences in the representation of theme schools and academies (which may, for example, be more common in Manhattan), other determinants may include the mix and level of local business activity, incomes of the communities, etc.

Competitive Grants

The SBER reports that 1,136 New York City public schools receive competitive grants—that is, nearly all receive some support through competitive grants. These include more than $50 million in federal competitive grants, $102 million in state competitive grants and $139 million in other competitive grants.

The amount of support received by any one school, however, varies widely. As an example, federal competitive grants averaged roughly $45,000, but the median school received a substantially lower $11,670. While some schools received less than $200, others gained more than $900,000. This is not entirely explained by differences in school size. Large disparities are seen in per pupil amounts as well. Federal competitive grants averaged $57 per pupil, ranging from as little as $2 up to $2,039 per pupil.[12]

A similar pattern obtains for state competitive grants. While the average school received roughly $90,000 in state competitive grants, the median school received support of only about $16,000. At one extreme, some schools received less than $500, at the other, schools received more than a million dollars. Again, the disparities are not explained by differences in school size. State competitive grants averaged $103 per pupil, ranging from a low of $8 and to a high of $2,403 per pupil.

Interestingly, competitive grants from other sources are more important to schools than either federal or state grants, averaging almost $123,000 among recipient schools. The variation of support is even broader, ranging from a low of $2,460 to $3,308,370 in one school. School size seems to play a more important role here—other competitive grants average $136 per pupil, spanning a range of less than $1000 per pupil ($64 to $1,040).

HOW DO RECEPIENT SCHOOLS DIFFER FROM NON-RECIPIENT?

How do schools that received support through FPSI or reported on the Calendar differ in their demographic and fiscal characteristics from schools that do not report private support through these channels?[13]

Schools receiving funds through FPSI and/or funds reported on the Calendar received, on average, $19 per pupil in private support. The surveys indicate that the schools that do not benefit from FPSI or Calendar reported contributions received $63 per pupil on average, provided through the not-for-profit organizations. There are no significant differences between the two groups of schools in the average amounts per pupil of state competitive funds, federal competitive funds or other funds.

School recipients of FPSI and/or Calendar-reported funds tend to spend a little less on their total per pupil funding. They spent $8,473 per pupil on average, compared to $8,929 for non-recipient schools (in terms of FPSI and the Calendar). The range of per pupil spending for non-recipient schools is wider. The range for non-recipient schools was from $1,673 to $115,715, compared to $5,870 to $52,541 for the recipient group.[14]

Comparisons for school populations across the two groups of schools lead to the following conclusions. Schools receiving funds from the FPSI and/or funds reported on the Calendar, have smaller proportions of students often considered "at-risk" than non-recipient schools. Indeed, the proportion of white students is twice as high (30% compared to 14% in non-recipient schools), and the proportion of black and Hispanic students (26% and 33%) is lower than in non-recipient schools (38%). The percentage of students with limited English proficiency is slightly smaller in the recipient schools (13% versus 16% in schools that do not receive FPSI or Calendar-reported funds), and the percentage of students eligible for free lunch is much smaller (58% and 73%).

Recipients of FPSI and/or Calendar-reported funds tend to be larger (averaging 1,119 students enrolled, versus 969 in non-recipient schools). The range of enrollment was larger in recipient schools (from 50 to 5,004 students enrolled compared to a range of 37 to 4,536 students in non-recipient schools). The distribution of schools across elementary, middle and high schools was about the same in both groups.

WHAT DID WE LEARN ABOUT PARENT ASSOCIATIONS?

As we noted above, much of the public interest in private support for public schools is focused specifically on Parent Associations. Thus, it is worth devoting some attention to the lessons we have learned about Parent Associations, in and of themselves. First, only fifty-nine Parent Associations reported donations to schools per se to the Board of Education, totaling just over a half million dollars.[15] Schools that reported receiving contributions from a parent association received an average of $11 per pupil or $10,176 per school. Thus, these organizations seem to be less important as a source of direct financial support to public schools than other not-for-profit organizations, or granting agencies and organizations, despite the attention they receive from the press. Of course, these figures are clearly significantly underestimated. Anecdotal evidence suggests that many schools, particularly those that use their playgrounds for weekend flea markets, receive significantly more resources from their parent body, including, but not limited to contributions garnered through their parent associations. Further, it is likely that there are many more parent associations operating, although their fund-raising is more limited. Whether, and to what extent, schools receive additional support from parent associations is clearly an area warranting further study.

Understanding the role and scope of activities of parent associations warrants further study, however, data collection is likely to be difficult. As noted earlier, small gifts and contributions, by either organizations or individuals, do not need to be reported to the Board of Education and few small contributions are, indeed, reported. Many parent organizations are independent not-for-profits, run by parents with relatively little financial oversight from the central Board of Education. More important, schools and school-based organizations, such as a parent organization, may be loathe to provide information about the success of their fundraising efforts out of concern that there will be some budgetary (or other) consequences they would prefer to avoid.

Interestingly, schools that receive financial support from a parent association receive, on average, less "other" funds than other schools. In particular, they receive less in state competitive grants (roughly $20 per pupil compared to the $112 per pupil of other schools) and their overall spending averaged only $7652, almost $1300 less than the $8937 spent in other schools. (Federal competitive grants and other grants differed by less than ten dollars per pupil.) Whether the lower spending in these schools or the lower levels of state competitive grants "caused" the higher levels of parent association fund raising, or vice-versa, or whether these were jointly determined by some underlying differences between these and other schools, is unknown but worthy of further study.

What can we learn from the fifty-nine schools reporting donations from parent associations in our data? First, these schools are primarily elementary schools (74%), and middle schools (21%). Second, they are more likely to be in Brooklyn, Staten Island and Queens. Indeed, roughly one third of the schools in this group are in Brooklyn, another third in Staten Island and one fifth in Queens. This differs markedly from the distribution of assistance from not-for-profits, which was more heavily concentrated in Manhattan. One interpretation is that schools in middle-class residential neighborhoods, such as those more commonly found in Brooklyn, Queens and Staten Island, turn to parents for financial support when needed, while schools elsewhere turn to philanthropists, businesses, and not-for-profits instead.

REGRESSION ANALYSIS

We explored the factors explaining the variation in private support for New York City public schools using relatively straightforward linear regressions to capture the relationship between private support and the characteristics of schools and their students. As shown in Table 2, we estimate equations explaining the determinants of five categories of spending: (1) total private support including contributions reported to the Board of Education and value of services provided by the surveyed not-for-profits;[16] (2) state competitive (non-entitlement) grants; (3) federal competitive (non-entitlement) grants; (4) other competitive grants, including a combination of contributions and grants from other governmental units not accounted for elsewhere; and (5) total revenues from alternative sources, defined as the sum of the other categories. All are per pupil measures transformed using logarithms. These simple OLS regressions are intended to be descriptive only, capturing the distribution of this alternative support, rather than attempting to disentangle the various behavioral factors that drive this distribution. That rather difficult job requires a great deal more data than is available for this study.

Thus, our regressions include several variables describing the student body: percent black, percent Hispanic, percent Asian, percent female, percent immigrated within the last three years, percent Limited English Proficient, percent free lunch eligible, percent full time special education as well as the log of total enrollment. In addition, we have included separate dummy variables for middle schools, high schools and collaborative/multigraded schools—the left out category is elementary—and dummy variables for four of the five boroughs in the city—Manhattan is the reference. We exclude 128 schools from the regression analysis because of missing data.

The regression results indicate that the amount of private support per se varies somewhat with socioeconomic characteristics of the students, school size, type, and location. But the overall explanatory power of this regression is small—the R^2 is 12.6%. Nonetheless, private support increases with percent black, percent Hispanic, and percent Asian. Support is not affected by the percent of students with limited English proficiency, the percent of students eligible for free lunch, or the percent of students in special education. Thus, there is little evidence here that private support favors more advantaged populations. Large schools receive less private support per pupil and middle and high schools receive less than elementary schools. And, as noted earlier, geography matters—Manhattan schools receive more than schools in any other borough, followed by the Bronx, Queens, Brooklyn, and State Island.

As shown in column (2), state competitive revenues show no significant relationship with percent black or percent Asian; however, schools with a higher percentage of Hispanic children received slightly less. Schools with a greater representation of LEP students receive significantly more of these funds, perhaps offsetting the difference. State competitive grants decrease with percent recent immigrants and are not significantly related to poverty or the representation of special education children. High schools seem to secure significantly more state competitive revenue than either middle or elementary schools and "collaborative/multigraded" schools receive even more. Again, geography matters, but the disparities are much smaller. Interestingly, these regressions have relatively high explanatory power—explaining more than two thirds of the variation in state competitive grants.

Turning to federal competitive grants, the coefficients indicate a positive relationship with black and Asian representation. While percentage of Hispanics, women and recent immigrants are insignificant, there is a positive relationship to Limited English Proficient students and a negative relationship with the percent of students eligible for free lunch. In contrast to the state grants, high schools get less than middle and elementary schools and collaborative/multigraded schools get the least.

The parameters in column (4) of Table 2 describe the distribution of the wide array of "other" grants and support. There is a positive relationship with the representation of black, Hispanic and Asian students. There is a negative relationship to percent immigrants and a positive relationship to percent LEP, and no relationship with percent free lunch eligible and percent full time special education. High schools and collaborative/multigraded schools get less than elementary and middle schools.

Column (5) of Table 2 shows coefficients describing the distribution of the sum of the non-traditional revenues. In sum, support is increasing in the representation of all minorities, relative to whites, and of LEP students. Support is decreasing in the representation of immigrants and students who are free lunch eligible. Large schools get less support per pupil, high schools get more than elementary and middle schools and the collaborative/multigraded schools get the most.

Taken together, the regression results indicate that non-traditional support for public schools—including private support—varies with socioeconomic and demographic factors. To some extent the distribution reflects the preferences and agendas of donors including, quite importantly, state, federal and other government agencies and organizations. But it also reflects the abilities of school leaders to apply for and obtain grant funding, as well as the political economy of non-entitlement government funding. Thus, it may not be surprising that schools with more poor children

Table 2. Regression Results

	Dependent Variable is Log of Per Pupil Revenues				
Independent variable	*(1) Private Support*	*(2) State Grants*	*(3) Federal Grants*	*(4) Other Grants*	*(5) Total*
Intercept	6.9251*** (0.8342)	4.4026*** (0.3513)	5.7571*** (0.6397)	5.0518*** (0.1199)	7.4796*** (0.2348)
Percent Black	0.0103** (0.0042)	0.0020 (0.0018)	0.0112*** (0.0032)	0.0020*** (0.0006)	0.0054*** (0.0012)
Percent Hispanic	0.0130** (0.0054)	–0.0047** (0.0023)	0.0030 (0.0041)	0.0023*** (0.0008)	0.0047*** (0.0015)
Percent Asian	0.0162** (0.0069)	–0.0037 (0.0029)	0.0152*** (0.0053)	0.0035*** (0.0010)	0.0061*** (0.0019)
Percent Female	–0.0092 (0.0010)	0.0100** (0.0042)	–0.0074 (0.0077)	–0.0022 (0.0014)	0.0030 (0.0028)
Percent Immigrant	–0.0104 (0.0123)	–0.0193*** (0.0052)	–0.0024 (0.0095)	–0.0057*** (0.0018)	–0.0061* (0.0035)
Percent LEP	0.0056 (0.0087)	0.0168*** (0.0037)	0.0315*** (0.0067)	0.0030** (0.0013)	0.0106*** (0.0025)
Percent Free Lunch	–0.0034 (0.0041)	–0.0023 (0.0017)	–0.0150*** (0.0032)	0.0004 (0.0006)	–0.0041*** (0.0012)
Percent Spec. Ed.	–0.0017 (0.0104)	–0.0007 (0.0044)	0.0042 (0.0080)	0.0022 (0.0015)	–0.0011 (0.0030)
Log Enrollment	–0.6073*** (0.0900)	–0.2500*** (0.0379)	–0.2075*** (0.0689)	–0.0403*** (0.0129)	–0.3134*** (0.0253)
Middle School	–0.3243** (0.1482)	0.0868 (0.0624)	0.1364 (0.1136)	–0.0282 (0.0213)	0.0327 (0.0417)
High School	–0.4571** (0.1944)	2.5625*** (0.0819)	–0.4969*** (0.1491)	–0.2441*** (0.0230)	0.6419*** (0.0547)
Collaborative	–0.7046 (0.4780)	3.6091*** (0.2013)	–0.9585*** (0.3665)	–0.2037*** (0.0687)	1.1927*** (0.1345)
Bronx	–0.5096*** (0.1814)	–0.0984 (0.0764)	–1.1334*** (0.1391)	–0.0317 (0.0261)	–0.3657*** (0.0510)
Brooklyn	–0.7701*** (0.1720)	–0.1575** (0.0724)	–1.5419*** (0.1319)	–0.0105 (0.0247)	–0.3648*** (0.0484)

Table 2. Regression Results (Cont.)

	Dependent Variable is Log of Per Pupil Revenues				
Independent variable	*(1) LGIFPP*	*(2) LSCPP*	*(3) LFCPP*	*(4) LOTPP*	*(5) LSUMPP*
Queens	–0.7436***	–0.1510*	–1.7674***	–0.0631**	–0.4587***
	(0.1902)	(0.0801)	(0.1459)	(0.0274)	(0.0535)
Staten Island	–1.1545***	–0.0417	–2.1617***	0.2141***	–0.3183***
	(0.3087)	(0.1300)	(0.2368)	(0.0444)	(0.0869)
F	9.10	133.28	20.45	18.86	49.11
R-square	0.1264	0.6795	0.2455	0.2307	0.4385
No. of Observations	1,023	1,023	1,023	1,023	1,023

Notes: * Indicates significance at the 10 percent level
** Indicates significance at the 5 percent level
*** Indicates significance at the 1 percent level
Standard errors in parentheses
Source: Authors' calculations

and more immigrant children—whose parents are less likely to vote—receive less funding, ceteris paribus. At the same time, the additional funding obtained by schools serving larger black and Asian populations, may provide comfort to those concerned about racial biases that may work to their disadvantage.

These results must be interpreted with caution, because the data are incomplete and the direction and magnitude of the bias due to unreported and missing data are unknown. Still, given the paucity of information about private and competitive public support for public schools, these analyses provide a useful beginning.

CONCLUDING REMARKS

Many not-for-profit organizations, corporations, foundations and individuals provide support to the New York City public schools. Our analysis of the available data identified at least some private support for the vast majority of schools in New York—962 public schools, distributed widely across the city's boroughs, benefit from direct contributions of cash, in-kind, and through programs funded by the private sector and reported in one of our three databases. Thus, these results suggest an important role for not-for-profit organizations in supporting New York City public schools. Prior to this research, one might have been concerned that this support is targeted narrowly at a small group of schools. This preliminary research indicates that, in contrast to expectations, the vast majority of schools benefit from at least some form of private-sector support. Given the partial nature of the survey, there is reason to believe that even the schools not represented in these data as receiving private support are likely to be recipients of contributions of cash, materials or services.

While this is encouraging news, the picture that emerges from this initial statistical portrait is far from complete. Many organizations that provide support for New York City public schools were not included in the survey; future work should expand the survey design and use other methods to include a more comprehensive accounting of private funding and non-traditional sources of support for New York City's public schools. This support is clearly significant and relatively little is known about its nature, distribution and impacts on public schooling.

Finally, our analyses reveal an important role for competitive grants from state and federal government and other institutions. These grants are typically more important revenue sources than private contributions and may serve similar purposes. Thus, additional work examining the sources and uses of resources by public schools should include some attention to both types of "non-traditional" support for public schools.

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NOTES

1. There is, however, some research into private support for public schools in other states. Brunner and Sonstelie (1997, 1999) report evidence from California and Addonizio (1999) reports evidence from Michigan.
2. As an example, some organizations support education in New York City exclusively through advocacy activities, rather than through service provision or other direct support. Thus, this type of organization would not be appropriate to include in sample of not-for-profits surveyed.
3. See Steinberg (1998).
4. As an example, although it is likely that higher income parents provide a more valuable bundle of school supplies to their children's classrooms, it is difficult to imagine that these contributions could be easily tracked, represent large overall amounts, or influence public policies under current political and social conditions.
5. Given their importance in supporting public schools, identifying their contributions is a priority both to support an effort to increase support for public schools and to provide insight into the equity and efficacy of this

support. The survey undertaken and the research supported by BOE/OD reflect an effort to do so.

6. See Shulte (2001) for an example in Washington.
7. See Etzioni (1998).
8. As previously described, these data were collected beginning in the Spring of 1999 by New York University's Institute for Education and Social Policy, in concert with the New York City Board of Education's Office for Development (BOE/OD). This exploratory research was intended to identify the sources, uses and distribution of private-sector support for public schools in New York City in order to (1) support BE/OD's effort to raise funds from the private sector; and (2) to provide analyses to inform future policies and decisions regarding the uses of private money in New York City's public schools.
9. More specifically, the Fund for Public Schools, Inc. is a nonprofit arm of the Board of Education, which solicits and coordinates contributions of _money, office machines, scientific and athletic equipment, furniture and fixtures, toys and similar items from "concerned business people, community groups, and private citizens."
10. State grants include legislative grants, magnet grants and Comprehensive Instructional Management System grants. Federal grants include magnet grants and bilingual program grants. This last includes capital projects, early grade paras redeployment, self-sustaining accounts, Employment Prep Education Program, city-funded programs, food services, building code maintenance and student information services grants.
11. As an example, we have obtained budgets of parents associations that suggest overall expenditures that substantially exceed the contributions reported by those entities to the Board of Education. The disparity is due, in part, to expenses incurred in fundraising, but equally to the nature of the reporting requirements—that is, contributions made in small amounts need not be reported on the Calendar. We have no evidence to suggest that any parent association has failed to comply with regulations.
12. Note that the numbers in this section differ slightly from the numbers reported in Table 1. This is because the numbers in this section correspond to the sample of schools that receive competitive grants in all of New York City (there are 1,136 of them), while the numbers reported in Table 1 refer to the 1,023 schools in our regression sample.
13. In the subsequent analysis, we drop from the sample 60 schools that have SBER data, but no ASR data, or data on private contributions.
14. This very wide range reflects, in part, the very high (and low) spending of schools in the process of closing or opening.
15. We use the term Parent Association to include the broad range of associations, Parent Teacher Associations, and the like. Our data were insufficiently detailed to allow a nuanced distinction to be drawn between them, and insufficiently voluminous to allow us to identify any differences between these in the level and character of the support they provide. Three additional Parent Associations provided support for schools within schools or programs within schools.
16. Contributions from Parent Associations and Parent Teacher Associations are included in this category, because they are reported through the FPSI.

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CONCLUSION

CHAPTER 12

FISCAL POLICY IN URBAN EDUCATION

Lessons Learned and Implications for Research

Jennifer King Rice and Christopher Roellke

The intent of this volume was to consider some of the major issues currently confronting fiscal policy in urban schools and school systems. Given the breadth of this field of inquiry, our effort is an important, but incomplete one. We have focused on some of the most current, contested, and critical issues facing urban fiscal policy with the hope of shedding light and raising issues. As we recognized in the introduction to the volume, urban schools face multiple serious challenges as they work to reach high standards for all students. The goal of this final chapter is twofold: first, to highlight some of the key lessons that surface from the chapters in this volume, and, second, to outline compelling issues in need of further examination. These comments are organized into four sections, each highlighting an important consideration that policy makers, leaders, and researchers need to pay close attention to as they attend to the fiscal needs of urban schools and school systems. The chapter concludes with final remarks about the volume.

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THE COMPLEXITY OF SCHOOL REFORM IN COMPLEX SCHOOLS AND SCHOOL SYSTEMS

The current school reform climate is loaded with policy reforms that, on face value, seem relatively straightforward. The education policy terrain is littered with options like class size reduction, block scheduling, extended day programs, summer school, as well as a wide array of models for whole school reform. While many of these alternatives have reasonably well articulated properties and purposes, research shows that their implementation in schools and school systems is complicated by the complexity of these organizations making the implementation of reforms highly dependent on a variety of contextual factors. This is certainly the case in all schools, but is especially problematic for urban educators, who confront a high concentration of at-risk students and a wide diversity of competing reforms that focus on at-risk youth.

This volume included two chapters on whole school reform, an increasingly common approach to improving urban schools. Much attention in education reform circles has focused on such comprehensive school reform models as promising alternatives for improving the effectiveness of underperforming schools serving large concentrations of at-risk students. In fact, several broad policy initiatives at the national, state, and local levels explicitly link compensatory school funding to the adoption of such models of school reform. At the national level, in November 1997, the U.S. Congress allocated $150 million to support the implementation of research-based reforms in schools across the country. The Comprehensive School Reform Demonstration (CSRD) program provides schools with grants of at least $50,000 to support redesign using whole school reform. While the federal legislation identifies criteria for comprehensive school reform models, individual states are granted much discretion in determining which schools receive funding and which models will be supported. If the CSRD program is considered successful, Congress may extend it to focus the entire $7 billion Title I program on comprehensive school reform.

A state level example is the 1998 *Abbott v. Burke* decision, in which the New Jersey Supreme Court determined that the state constitutional right to a "thorough and efficient education" must include a supplemental program designed to ameliorate the deficits that poor children bring with them to school. One component of the Court's decision involves the mandate that each Abbott school adopt and implement a research-based whole school reform model, such as Success for All, designed for children with disadvantages. The implementation of school wide reform in New Jersey is the focus of the Erlichson and Goertz chapter in this volume.

Finally, apart from policies stemming from litigation and/or legislation, comprehensive school reform models have been embraced on a broad scale in many challenged school systems throughout the country. For instance, Prince George's County, Maryland has a number of schools reflecting the School Development Program of James Comer. Likewise, many of the Memphis City Schools are now Success for All or Roots and Wings schools given the district's commitment to this particular model. Examples like these can be observed in school districts throughout the nation.

The chapters included in this volume that address issues related to school wide reform illustrate the complexities associated with selecting and implementing comprehensive school reform models (Bifulco; Erlichson & Goertz). They also reveal how little is known about these approaches, particularly in terms of how they can be expected to translate into higher student achievement. So, while school reforms such as these may hold promise for realizing higher achievement for all students and schools, the chapters in this volume demonstrate that they are more complicated than one might expect. Further, additional work must be conducted on what works, for what kinds of schools, under what circumstances, and at what cost.

THE CHALLENGES OF GETTING AND KEEPING HIGH QUALITY TEACHERS IN URBAN SCHOOLS

High quality teachers are a fundamental resource needed to realize the high standards characteristic of most state accountability plans. While researchers have debated the extent of the teacher supply problem nationally, there is general agreement that schools serving large numbers of poor and minority students face the greatest challenges in recruiting and retaining a faculty of qualified teachers. Further, urban schools tend to serve high concentrations of students with these characteristics, making teacher quality issues a key concern in urban education.

Several chapters in this volume deal directly with issues related to staffing urban schools with qualified teachers (Imazeki; Theobald & Michael; Rice & Allgood). One important finding is that the retention of good teachers in these schools is as important as teacher recruitment efforts. In other words, resources aimed at elevating teacher quality in urban schools should be targeted not only at drawing in high quality individuals entering the profession, but also toward reducing teacher turnover in those schools. The chapters also shed some light on promising policy directions that have potential for advancing these dual goals of recruitment and retention in urban schools. Of key importance is the finding that compensation-based strategies are not likely to be sufficient to attract and retain high quality teachers in urban schools. Policies must attend to the working conditions in these schools, in addition to providing targeted salary incentives, if they are to realize a high quality urban teaching workforce.

These chapters also reveal areas for further study. While recent syntheses of the literature on the relationship between teacher characteristics and teacher effectiveness have provided a better understanding of the kinds of teacher qualities that matter, they have also illuminated the need for more and better empirical research on what counts as a quality teacher. Further, additional research on the district, school, and classroom level factors that draw high quality teachers to urban areas is essential for the design of policies to accomplish this goal. Finally, researchers and policy makers should make efforts to gain a better understanding of the kinds of policies and practices that successfully recruit quality teachers to urban environments and retain those teachers once they are there.

REACHING BEYOND THE CONVENTIONAL WALLS OF SCHOOL REFORM

Public systems rely heavily on revenues from local, state, and federal levels and most analyses of fiscal education policy tend to focus on these revenue sources. However, school leaders and policy makers are aware of a broader resource base than is typically recognized in the research.

Several chapters in this book reveal the extent of fiscal support for students in urban schools from non-traditional sources (Schwartz, Amor & Fruchter; Picus, McCroskey, Robillard, Yoo, & Marsenich; Brent). These different, but overlapping inquiries find a noteworthy level of activity with respect to private and non-traditional sources, funds that are often neglected in fiscal analyses of education policy. One study investigates the level of private and non-traditional support flowing to schools in a large urban district, and finds that the vast majority of schools receive supplemental support from these sources, but the amount varies by the type of support and the characteristics of the school. Another looks more broadly at the financing of children's services in a large urban school district, and reports that more than half of the resources devoted to these activities come from sources other than the school district. Finally, a study of private school funding documents the high level of activity of private education in urban areas.

Taken together, these studies imply that private and non-traditional resources devoted to education and other children's services are not trivial, and therefore should be more common in fiscal analyses of education. Second, they all reveal a substantial level of variability in the amount of funding and the ways in which these funds are allocated, a finding that has clear implications for equity. Finally, all three studies shed light on different angles of an understudied area, namely, the nature and distribution of private, non-traditional support.

ACCOUNTABILITY: THE CHALLENGES OF MONITORING SCHOOLS AND SCHOOL SYSTEMS

The current policy climate characterized largely by high-stakes accountability introduces a variety of issues related to the ability of states to monitor the progress and overall condition of schools and school systems. These issues are of particular salience for urban schools where performance is often of concern. While much of the attention associated with the challenges of monitoring schools and school systems has focused on testing, other factors are also of importance when monitoring the quality of education. Several chapters in this volume deal with such matters, and offer important insights into the broader goal of accountability (Alexander; Iatarola, Stiefel, & Schwartz).

The chapters offer several key findings. First, urban districts struggle to meet the demands of fiscal accountability and increased standards for student achievement. Second, school district characteristics affect the ways that urban schools and districts utilize resources, and should be a factor in high-stakes accountability systems. Finally, a relationship exists between the fiscal condition of a school system and the ability of the school system to attract students in an open enrollment environment. This suggests that in order for accountability reforms to work, they must be attentive to the varying capacities of local school systems. Further research on all of these issues has the potential to contribute to the ongoing development of accountability-based policy.

CONCLUDING REMARKS

The solutions to the problems of urban schools are not easily answered by research, but we are confident that the type of work reported here is an important step in the right direction. In particular, the chapters included in this volume offer important lessons in the ongoing, but sometimes elusive, quest for increased equity and enhanced productivity in urban schools. Further, while some of the issues addressed in these chapters are specific to urban schools, many of the insights generated here, in our view, are applicable to all types of schools struggling to meet the ongoing demands of an intensive period of education reform. It is our hope that this volume, and the others that follow in the series, contribute policy-relevant research that can advance both research and practice with respect to fiscal policy in education.

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